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OF THE

MEDICAL SCIENCES.

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THE

AMERICAN JOURNAL

OF THE MEDICAL SCIENCES

FOR JANUARY 1857.

ART. I.—*Cases of Diseased Gall-Bladder—Suppuration with Enormous Distension—Cancer—Gall-stones, &c., with Remarks.* By WILLIAM PEPPER, M. D., one of the Physicians of the Pennsylvania Hospital.

THE diagnosis of diseases of the gall-bladder is, under all circumstances, attended with considerable difficulty; and, in fact, in most instances nothing but an approximation to the real state of the case can be attained. The chief reason of this, no doubt, may be found in the comparatively unimportant part which this viscus plays in the animal economy—its especial function being merely to retain the bile secreted by the liver until intestinal digestion commences. The cystic bile, it is true, owing to the absorption of its watery particles, is rendered more acrid and viscid, and therefore, perhaps, in this concentrated form, is better qualified to promote primary assimilation, calorification, or whatever function may be assigned to it. Nevertheless it is certain that, in numerous instances, there have been congenital deficiencies of the gall-bladder, or atrophy of the same—as the result of a permanent closure of its duct, from adhesive inflammation, gall-stone, or other cause—without giving rise to any appreciable disturbance of the system. Under the last named circumstances, it has been asserted that the continuous flow of bile into the duodenum tended to stimulate the digestive organs, and thus excite an incessant craving for food, or morbid appetite, such as sometimes attends certain forms of dyspepsia. More accurate observation, however, has refuted these views—so that we cannot even rely upon this symptom as an aid in the diagnosis of the diseases under consideration.

When we bear in mind that the gall-bladder has been found distended with bile, or stuffed with gall-stones, without any intimation of such a condition having existed during life, there is good reason for believing that the

sensibilities of this organ are not very exalted, even under more serious pathological conditions; so that the absence of pain still further tends to embarrass the diagnosis. Nor is there much to be gained, excepting in cases of gall-stones, by inspection of the alvine evacuations, owing to the large extent of alimentary canal through which the morbid products must necessarily pass; and even the detection of such concretions by no means shows that they came from the bladder, since they may have been formed in the hepatic or common duct. The fact, too, that disease of the gall-bladder is generally associated with functional or organic diseases of the liver, forms another obstacle to the accurate investigation of the pathological conditions of the former, which are almost necessarily overlooked in consideration of the greater importance of the latter class of affections. Jaundice, which so commonly attends the diseases of the liver or its ducts, and at once invites attention to the suffering organ, does not manifest itself in diseased conditions of the gall-bladder, excepting in those cases where the liver or its ducts are implicated.

Having thus briefly alluded to some of the most prominent difficulties attendant upon an investigation of the various diseases of the gall-bladder, the writer would state that the following cases are reported, not so much in the expectation that they may tend to elucidate these difficulties, as in the hope that they may induce other observers to pay more attention to this obscure class of affections.

Case I.—*Enormous Distension of the Gall-bladder by puriform matter—Hepatic Abscess, &c.*—A young man, æt. 26, plumber by trade, entered the hospital, January 7, 1856, complaining of uneasiness in the region of the liver. He stated that last August he had suffered with a severe attack of bilious fever, for which he had been salivated and subjected to other active treatment. From this time the uneasiness in his side gradually increased, but did not incapacitate him from pursuing his work, until about three weeks before his admission. There was now a perceptible fulness and hardness of the right hypochondriac region, with considerable tenderness upon pressure over this part. He was pale and somewhat emaciated, and had hectic fever complicated with slight diarrhœa. The symptoms continued much the same up to the beginning of March, when it was evident that the swelling had increased, and was also more elastic, but still unattended by any manifest fluctuation, œdema, or redness of the skin. The patient presented the sallow paleness of complexion so often seen in cancerous affections, but the conjunctiva was not yellow, nor was there any trace of bile in the urine, or deficiency of it in the discharges from his bowels. With the view of sustaining his strength, he was directed carb. ferri (Vallet) grs. v, three times a day, as also small portions of quinia and elix. vitriol, in connection with a highly nutritious diet; iodine ointment was also applied over the swelling.

By the middle of the month the tumor extended nearly down to the crista of the ilium, and was attended with evident fluctuation. Under these cir-

cumstances it was deemed expedient to use an exploring needle, with the view of ascertaining the character of the fluid; Dr. Peace, the surgeon then on duty, accordingly punctured the swelling about a hand's breadth below the ribs, and at its most prominent point. No fluid escaped, but the needle was stained with blood, which under the microscope presented no unusual appearance. As no bad effects followed this procedure, and as the patient was exceedingly anxious that some more effectual measure should be resorted to for his relief, a small exploring trocar was introduced at the same point. Two or three ounces of thick muco-puriform matter, tinged with bile, flowed through the canula, and was followed by considerable relief of the pain and tension; the improvement was, however, but temporary, and it was evident that a larger aperture would be necessary for the escape of the viscid fluid. From the absence of œdema, or redness of the integuments, there was reason to fear the want of adhesion between the cyst and the abdominal parietes; and, accordingly, it was deemed most prudent to apply the caustic potash in the usual way for promoting such adhesion.

April 1. The puncture having entirely healed, the caustic was applied; and was again repeated in a few days after the separation of the first slough. By the 10th of the month, the swelling had become tympanitic on percussion—the line of dulness varying with the position of the patient—and thus clearly showing that the sac contained both gas and fluid; moreover, his strength had rapidly declined, owing to an increase of the diarrhœa. Under such circumstances it was necessary to desist from all further applications, and at the same time endeavour to check the diarrhœa by laudanum enemata. Despite the most powerful stimulants, he gradually failed, and expired on the 19th, about three months and a half after his admission into the hospital.

Inspection.—The liver was not enlarged, but in the right lobe were two abscesses, containing together from two to three ounces of thick healthy pus; the rest of its structure was perfectly natural, nor was there any obstruction of the hepatic or common duct. The gall-bladder was greatly distended, and when punctured there was an escape of fetid gas; it also contained about two quarts of thick yellow puriform matter, mixed with shreds of lymph and tinged with bile—resembling the fluid drawn off about three weeks before death. In some parts, its parietes were fully a quarter of an inch thick, and this was particularly the case with that portion which is attached to the liver, whilst the more dependent part was unusually thin and easily lacerated; the mucous membrane throughout was in a sloughy or gangrenous condition. The orifice of the cystic duct was completely occluded by layers of false membrane; but the duct itself, though normal in most respects, was still somewhat dilated. The gall-bladder did not adhere to the abdominal parietes or to any of the adjacent viscera, and the most careful examination failed to detect any gall-stones either in the bladder or ducts. The other organs, as far as examined, were perfectly healthy.

Remarks.—The diagnosis in the above case was necessarily obscured by the

imperfect history and advanced stage at which it came under observation. The fact of there being no jaundice, or other evidence of functional disorder of the liver, only proved that the hepatic and common ducts were unobstructed, but certainly could not be relied upon as evidence of a healthy condition of the liver, and thus, by exclusion, lead to the inference that the fluctuating tumour was nothing but a distended gall-bladder; since it is well known that large abscesses or other extensive organic disease of the liver may exist without any appreciable disturbance of its functions. The writer has certainly seen more than half the liver in a state of cancerous degeneration, without any such manifestations—thus rendering it highly probable that the remaining healthy structure of the organ takes on supplementary action. On the other hand, it is equally well understood that a small cancerous mass or abscess pressing upon the ducts, will sometimes arrest the flow of bile, and consequently induce jaundice as effectually as the impaction of a gall-stone.

When an abscess is formed in the right lobe of the liver, and especially when near its convex surface, it is most apt to point, or form a fluctuating tumour, somewhat higher up than in the case under consideration; but no aid in the diagnosis could be formed from the mere locality of the swelling when the abscess occupies the lower surface of the liver; since in reality the tumefaction would occupy much the same locality as that resulting from a distended gall-bladder. It has also been observed that in case of an hepatic abscess, the tumour is at first hard and painful; whilst in a more advanced state, the fluctuation is but illy defined, and generally surrounded by an indurated margin. Moreover, as a general rule, such abscesses have a strong tendency to excite adhesive inflammation with the adjacent parts, and thus ultimately give rise to œdema of the cellular tissue, and finally to redness of the integuments: in all which respects it certainly differs vastly from a mere distension of the gall-bladder, resulting from a retention of bile. But in the case just reported the circumstances were far different; here there was probably from the very commencement, an extensive inflammation of the gall-bladder, giving rise to a painful and indurated tumour, and which only at an advanced stage was attended with central fluctuation. It was nothing but the absence of local œdema and redness which enabled the writer to doubt the existence of an hepatic abscess, and therefore to incline to the opinion that the swelling was rather due to inflammation and suppuration of the gall-bladder. At one time the peculiar cancerous appearance of the patient, in connection with the elastic character of the tumour, led to the opinion that possibly it might be a medullary sarcoma of the liver; the absence, however, of the bosselated feel which this disease generally presents, and finally, the supervention of unequivocal fluctuation, in connection with the previous history, soon dispelled this view of the case.

The constitutional disturbances were of but little aid in the investigation of the local affection; for there was decided hectic fever with rigors, diarrhœa, and in fact the same train of symptoms that attend an hepatic abscess: and,

indeed, it is more than probable that the hectic irritation was in a measure augmented by the secondary abscesses which occupied the right lobe of the liver.

That the diagnosis of enlargement of the gall-bladder is not always unattended by difficulties, even when occurring under more favourable circumstances than the present, is quite manifest from an examination of the records of surgery. Petit alludes to many instances in which it was mistaken for an abscess of the liver; and in one case, had himself commenced to open the supposed abscess, when the swelling suddenly disappeared, owing to the escape of the pent up bile by its natural route. And yet it must be admitted that a correct view of the case is altogether essential before attempting any surgical aid, since the escape of the smallest quantity of the acrid contents of the gall-bladder into the peritoneum would almost necessarily give rise to fatal peritonitis. Owing to the great danger of such an accident, it is now generally conceded that the tumour should not be opened until the inflammation of the integuments leaves but little doubt of adhesions having been previously formed; even under these circumstances, Boyer thinks it most prudent to wait until the external abscess is fully formed. Petit, however, recommends an earlier resort to the operation, provided all other means have failed to afford relief, and that there is good reason to believe that adhesions exist. In doubtful cases, this desirable result should be promoted by the application of caustic over the most prominent part of the swelling, as first recommended by Recamier; or by an incision down to the peritoneum, the wound then being filled with lint, as advised by Bégin in cases of hepatic abscess. With all the above precautions, it must still be admitted that cystotomy of the gall-bladder is not without risk; so much so, indeed, that many prefer waiting for the spontaneous opening of the cyst, or at least until the external abscess is fully declared. In the mean time, it should be remembered that the mischief in the gall-bladder is continuing, and that there is constant danger of its rupturing into the peritoneum; and consequently that it will not do under such circumstances to trust in the forlorn hope of its discharging—as in a few rare instances it has happened—either by the ducts, or through a fistulous opening into the duodenum or colon. For these reasons, in the case under consideration, it was decided not to await any longer the efforts of nature; and it is the opinion of the writer, that had surgical aid been interposed at an earlier period, the result might have been far different.

In a vast majority of instances, inflammation of the gall-bladder depends upon the presence of gall-stones irritating its mucous membrane or obstructing the ducts, and thus giving rise to injurious distension; or this result may be induced by an enlargement of the head of the pancreas pressing upon the common duct; but in the present case no such cause existed. The presumption is that the difficulty here depended upon a twofold cause—a congested condition of the biliary ducts, and a consequent retention of acrid bile in the gall-bladder—direct results of the bilious fever, with which the patient had

suffered at the commencement of his illness. Dr. Budd, in his valuable treatise on diseases of the liver, inclines to the opinion that not only inflammation of the gall-bladder, but also of the duodenum and pyloric extremity of the stomach, frequently depends upon the irritating properties of bile in certain forms of remittent fever; and in confirmation of this view, alludes to Dr. Boyle's dissections in the Walcheren fever, as also to his reports on the fever of Sierra Leone. In regard to the hepatic abscesses, it is highly probable that they were altogether secondary, and dependent upon the diseased condition of the gall-bladder—the inflammation having extended along the small veins, or the ichorous matter having been absorbed from the ulcerated surface. This view also, in a measure, appears to be confirmed by the author just quoted, who reports several cases of suppurative inflammation of the liver from a like cause.

In summing up the above case, the important points of interest appear to be:—

1. Great distension of the gall-bladder by muco-puriform matter tinged with bile, the result in the first instance of a congested condition of the ducts followed by a permanent closure of the cystic orifice from a deposition of false membrane, and entirely disconnected with gall-stones, enlargement of pancreas, or other more common cause of obstruction.

2. As illustrating the fact that such distension in connection with extensive inflammation and final disorganization, could exist for so long a period, without giving rise to adhesions or rupture.

3. The extrication of gas, resulting from the sphacelated condition, and giving rise to resonance on percussion, well calculated to mislead any observer who had not examined the swelling in its earlier stages.

4. The difficulty of diagnosis; depending in the first place upon the resemblance which the tumour in its early stages bore to medullary sarcoma of the liver; and, at a more advanced period, to an hepatic abscess.

5. As showing the importance of not too long deferring surgical aid under similar circumstances, in the vain hope that nature might ultimately afford relief.

Case II.—*Cancer of the Gall-Bladder and Pancreas.*—A woman, aged about 50, had been subject for several months to severe epigastric pains, attended with more or less vomiting of green bilious matter: at one time the pain in the left side was so severe as to induce the belief that she had pleurisy of that side, for which she had been bled and subjected to other antiphlogistic treatment. In the beginning of June, 1854, there was considerable emaciation, attended with the straw-coloured tint so characteristic of the cancerous diathesis; the bowels were constipated, but there was no deficiency of bile in the alvine discharges, and the urine was pale; nor was there any discoloration of the conjunctiva. The catamenia had ceased for the last five years, but ately there had been considerable leucorrhœal discharge. In the right hypo-

chondriac region, and about midway between the umbilicus and the margin of the ribs, there was an immovable and indurated tumour apparently about the size of the fist, and more or less tender under pressure. Her bowels were kept open by means of laxative enemata, assisted occasionally by a pill composed of rhubarb and ext. colocynth. comp., whilst the irritability of stomach was somewhat controlled by the application of morphia to a vesicated surface over the epigastrium; to relieve her pains, she also took small portions of morphia combined with the extract of hyoscyamus. Her nourishment consisted chiefly of concentrated broth and wine whey; the greater part of which, however, was immediately rejected, mixed with the same green bilious matter which had been discharged throughout her illness. The emaciation rapidly increased, and she expired about one month after coming under my care, and nine months from the commencement of her indisposition.

Inspection the following day.—The liver to all appearance was perfectly healthy, nor was there anything abnormal about its ducts; the gall-bladder, however, was converted into an indurated mass, at least four inches long and an inch and a half thick—its increased dimensions depending upon a scirrhous degeneration of its walls. When incised, its different coats presented the same appearance as that which attends scirrhus of the pylorus; its cavity was considerably diminished, and contained a little glairy mucus, without the least trace of bile; and it was with difficulty that the smallest sized probe could be passed through the cystic orifice. The head of the pancreas was enlarged and exceedingly firm, cutting like cartilage; but the rest of the gland appeared healthy. The neck of the uterus was also in a scirrhous state, but not ulcerated; and the ovaries, though atrophied, were in all respects natural; other organs perfectly healthy.

Remarks.—Cancer of the gall-bladder, unassociated with a similar degeneration of the liver, is by no means a frequent occurrence; and the writer is not aware of any particular train of symptoms by which such a condition is indicated. In many respects, the case just reported bore a striking resemblance to scirrhus of the pylorus. In the last named disease, it is true that the matter vomited at first consists of a glairy fluid, mixed with alimentary substances in various stages of decomposition; whilst at a later period, and when ulceration has taken place, the contents of the stomach are discoloured by altered blood, and are, therefore, frequently either black or brown; whereas, in the present instance, one of the most prominent symptoms was the incessant bilious vomiting. This peculiarity may in a measure be explained, by the circumstance of the cystic duct being closed, and the bile secreted by the liver necessarily at once transmitted to the duodenum; where, meeting with an obstruction, owing to an enlargement of the head of the pancreas, it was forced through the pyloric orifice into the stomach, and thus excited constant nausea and vomiting. That a certain amount of bile and food must have passed through the duodenum, is evident from the healthy appearance of the evacuations; and yet the obstinate constipation probably depended in a measure upon

the diminished peristaltic action, resulting from a deficient supply of bile and alimentary matter. As a general rule, when the head of the pancreas is much enlarged, it presses more or less upon the common duct, and thus gives rise to jaundice, and in some cases even induces dilatation of the ducts and gall-bladder; no such difficulty, however, could have existed in the present case, as is clearly shown by the absence of all indications of functional disorder of the liver. The bilious vomiting, as before stated, was no evidence of hepatic derangement, but merely the result of regurgitation of healthy bile into the stomach; had the pylorus been obstructed, as is generally the case in scirrhus of this orifice, bilious vomiting could scarcely have occurred, or, at least not to the extent above reported, and which certainly formed one of the most prominent features of the case.

The large size of the tumour and its immobility, also tended to induce the belief that it could not depend upon a mere scirrhus of the pylorus—which is generally movable, and changes its position according as the stomach is in a state of distension or vacuity. In those cases, however, where the pancreas is implicated and adherent to the stomach, the above distinctions are of course valueless. Even under these circumstances, the pancreatic tumour does not generally extend so far into the right hypochondriac region, nor encroach so closely upon the margin of the ribs, as did the swelling in the present case. Whilst then the straw-coloured tint, great emaciation, and in fact all the usual concomitants of the cancerous cachexia fully indicated the malignancy of the abdominal disease, it must at the same time be confessed that neither the general symptoms, nor the results of a careful manual examination, could possibly enable the observer to form a positive diagnosis as to the exact locality of the tumour. For reasons already stated, the writer was induced to believe that it did not depend upon an ordinary scirrhus of the pylorus or pancreas, or even of both these combined; but the peculiarities were alone explained by the examination *post-mortem*. The pain, it is true, was far more intense than that which commonly attends cancer of the stomach or pancreas; but this symptom did not aid in localizing the affection, since in many instances, extensive disease of the gall-bladder has existed with comparatively little suffering.

Case III.—*Gall-stone of unusual dimensions, simulating Scirrhus of Pylorus.*—A merchant, aged 45, of previous good health, suffered during the winter of 1854, with frequent attacks of vomiting, occasional pains in the bowels, and obstinate constipation. By the following spring he had become exceedingly emaciated, and had constant hectic fever, attended with frequent attacks of diarrhœa. His complexion was sallow, but there was no other indication of biliary derangement; tongue and cheeks covered with aphthæ; ankles œdematous; thirst intense, but total loss of appetite. He also had slight cough and oppression, with dulness of percussion and want of respiratory sound over lower half of right thorax. About two inches to the right of

the middle line, and an inch and a half below the margin of the ribs, there was an oblong tumor deep-seated in the abdomen, but which could be readily grasped between the fingers when the abdominal muscles were relaxed; besides which there were several other indurated masses which could be distinctly traced owing to the attenuated condition of the abdominal parieties: these latter appeared to occupy the small intestine, and closely resembled fecal accumulations. So great was the irritability of stomach that even the smallest portion of either solid or fluid aliment was almost immediately rejected; and an effort was consequently made to sustain his strength by nutritious enemata. Strong iodine ointment was applied over the abdomen; and with the view of allaying the excessive vomiting, he took the remedies usually resorted to under these circumstances—such as tinct. rad. aconite, creasote, hydrocyanic acid, morphia, and finally camphor dissolved in chloroform, but all without any permanent benefit. He expired about three weeks after coming under my notice, and, as near as could be ascertained, some six months from the commencement of his sickness.

Inspection.—The tumour felt during life in the pyloric region proved to be a large gall-stone completely filling the bladder and moulded to its shape; the gall-bladder itself, however, was perfectly healthy, as also the liver and its ducts. The surface of the stone was unusually smooth, and of a light yellow colour; it weighed a few grains more than half an ounce, and measured in its greatest circumference two inches, and in length two and a half. It was composed of almost pure cholesterine, and presented a beautiful arrangement of grayish white crystals. Several of the convolutions of the small intestine were agglutinated, whilst their parietes at these points were greatly thickened and evidently in a scirrhous condition; in one or two places they communicated with each other by ulcerated openings; but it was impossible to make a more minute examination of the intestines, owing to their extensive adhesions. Some of the mesenteric glands were enlarged and indurated, but contained no trace of tubercular matter; excepting some softening of the mucous membrane —which was most probably *post-mortem*—the stomach was perfectly healthy. The right pleura contained several quarts of bloody serum, and the lower lobe of the lung was invested with soft false membrane—the substance of the lungs, however, was perfectly healthy. The other organs, as far as examined, were natural.

Remarks.—The liver being depressed by the effusion in right pleura, accounts for the unusual locality of the gall-bladder; whilst at the same time the existence of well-marked cancerous cachexia, in connection with constant vomiting, was calculated to induce the belief that the patient was suffering with scirrhus of the pylorus; moreover, as no mention had been made of previous attacks of jaundice or hepatic colic, there was no cause for suspecting that either the liver or gall-bladder was at fault. From the appearance of the stone, there is reason to believe that it must have been formed long anterior to the development of the cancerous affection in the intestines; and yet, although it

completely closed the cystic duct and filled the gall-bladder, it had caused no inflammation or structural change in this viscus. This, no doubt, in a measure was owing to its polished surface, total freedom from angularities, and low specific gravity. Although nothing is more common than to find numerous gall-stones which had been unattended by inflammation, or even any manifestation of their existence during life; yet under such circumstances there has generally been a certain amount of fluid bile in which the concretions were suspended, or at least kept from exercising any injurious pressure upon the walls of the bladder; whereas in the present instance no such protection was afforded; and it is hardly conceivable that a gall-stone of the same bulk as the one reported, but of irregular form and rough surface, could be so long impacted without giving rise to some serious accident. The probable correctness of this view is confirmed by a case which recently came under observation of the writer in consultation with Dr. Yardley. The stone was about the size of a common walnut, of irregular form, rough, and unusually heavy; the result was extensive inflammation of the gall-bladder, followed by an ulcerated opening into the duodenum, through which the stone passed into the intestines, and finally became impacted about four feet above the ileo-colic valve—causing obstinate constipation and vomiting, and resulting in death. The almost sphacelated condition of the gall-bladder must, however, have contributed greatly to the fatal issue; and it is by no means improbable that without this complication, life might have been sustained until the concretion had passed into the colon—it having already traversed some twenty feet of the small intestine. (See *Transact. Col. Phys.*, Phil., 1852, p. 402.)

Another consideration, very naturally suggested by the above case, is the possibility of a biliary calculus of such dimensions escaping by the cystic and common ducts. In numerous instances gall-stones of very large dimensions have been voided, without having been preceded by a train of symptoms such as commonly attend inflammation and ulceration of the gall-bladder; whilst, at other times, they have been discharged from the bowels after protracted attacks of jaundice in connection with a continuous pain or uneasiness in the region of the liver. Under the first named circumstances, it has been supposed that a small calculus may have passed into the intestine, and there by accretion have attained considerable dimensions. Such an occurrence is certainly quite conceivable, but it still lacks the support of accurate observation. On the other hand, examinations after death have revealed adhesions and fistulous communications between the duodenum and gall-bladder in cases where, long antecedent to this event, large gall-stones had been discharged from the bowels, without having been preceded by any symptoms indicative of such alterations. In the second place, or when protracted pain and jaundice have existed, there is every reason to believe that these large concretions have passed through the dilated duct. A lady, recently under the care of the writer, died from cirrhosis in connection with a large gall-stone lodged at the orifice of the common duct; in this instance, the duct behind the obstruc-

tion would readily admit the index finger, and the stone was about the size of a common marble. Cruveilhier makes mention of much greater enlargements of this kind without the presence of any obstructing cause; though at the same time it is quite likely that some such obstruction may have preceded the dilatation. In either case it goes to show the great dilatability of the gall-ducts, and consequently the probability of biliary concretions of very considerable dimensions being occasionally transmitted through them.

In the case which forms the subject of the present remarks, it will be remembered that the stone was completely moulded to the bladder, and that consequently its apex exactly corresponded to the orifice of the cystic duct. Under such favourable circumstances it might be supposed, from what has been already stated, that the duct would necessarily have been more or less dilated —the stone acting as an entering wedge. That such was not the case, may be attributable to the probable circumstance of the contractility of the gall-bladder being destroyed, owing to the distension and compression resulting from so large a calculus. In this connection it may not be uninteresting to allude to the fact that A. Kölliker, in his *Manual of Human Histology*, states that "the gall-bladder has, between its peritoneal covering and the abundant subserous connective tissue, a delicate layer *of muscles*;" so that we must no longer consider it a mere membranous sac. From this new development of its minute structure, it may be readily understood that the gall-bladder may be subject to paralysis from over-distension; or, on the other hand, that its muscular coat may become hypertrophied under partial obstruction of the ducts, precisely as occurs in the urinary bladder in cases of enlarged prostate.

Case IV.—*Gall-stone obstructing the Pancreatic Duct, causing extensive Disease of the Pancreas, and ending in Death.*—A married lady, aged 45, of small frame but exceedingly obese, was seized during the month of October, 1850, with severe pain in the epigastric region, lasting for several days, and attended by jaundice. Having experienced several similar attacks during the previous year, she supposed it to be gout in the stomach. A few days after, and when apparently convalescent, the pain returned with increased intensity; and I was accordingly called to see her at midnight, in consultation with her physician, Dr. E. Wallace. She was now slightly delirious; pulse frequent; abdomen distended and tender; great thirst, with constant vomiting; pain persistent and intolerable. The various preparations of opium which had been administered, were immediately rejected, and the bowels remained obstinately constipated, notwithstanding the use of large laxative enemata. Under these circumstances, sixty drops of laudanum were given by injection, and at the same time she was directed twenty drops of a solution of camphor in chloroform (camph. ʒj, chloroform ʒij). Some dry cups and a few leeches were applied over the seat of pain, followed by hot fomentations. Under this treatment the pain and vomiting were somewhat relieved, and she was even enabled to retain some nourishment. The following morning, however,

her prostration was extreme, and, notwithstanding the free use of brandy punch, beef-essence, and carbonate of ammonia, she gradually sank, and expired about mid-day, just sixteen hours from the commencement of her last violent seizure.

Inspection the following day.—The liver was large and fatty, and its ducts distended with bile; the common duct readily admitted the little finger, and its orifice was obstructed by a gall-stone about the size of a small cherry, which also completely closed up the pancreatic duct. The pancreas was at least three times its natural size; it was also soft and livid, but without gangrenous odour. Some patches of white membraniform matter adhered to the mesentery, and about one pint of pinkish semi-transparent gelatinous matter was contained in the cavity of the pelvis, and interspersed between the convolutions of the intestines; the peritoneum, however, was not injected, nor did it present any appearance of inflammation. Besides the gall-stone above specified, there were fifteen of rather smaller dimensions in the gall-bladder—this latter was distended with bile, but in other respects natural.

Remarks.—It is to be regretted that a more minute examination of the pancreas could not have been made, but as it had to be done in haste, and under unfavourable circumstances, a more thorough investigation was impracticable. From the extensive alterations of this organ, it is more than probable that it must have been diseased long before death, and contributed in a great measure to the fatal result. The diagnosis in the various affections of the pancreas is at all times attended with considerable difficulty, and the most that can generally be done is to form an approximative idea as to its real condition. Excessive pain in the epigastric region, fever, tumefaction, pyrosis, slight jaundice, and occasionally salivation, appear to be the most common symptoms attending the acute inflammatory affections; whereas in the more chronic forms of disease, much stress has been laid upon the appearance of a peculiar oleaginous matter in the alvine discharges, depending upon an arrest or diminution of the pancreatic secretion, which, according to the researches of Bernard, is so essential for the assimilation of fatty matters. In the present instance the severe pain, jaundice, and constipation, were fully explained by the obstruction of the common duct; whilst the general distension of the abdomen, in connection with the large amount of fat, made it quite impossible to detect any tumefaction of the pancreas. In regard to the other symptoms, such as salivation, pyrosis, fatty discharges, &c., they did not occur at any time during her previous indisposition, or in her last fatal illness: so that there really was no sufficient reason for suspecting the above serious complication.

The impression of the writer is that the disease of the pancreas was of recent date, and the direct result of the gall-stone obstructing its duct—thus causing distension, congestion, and finally disorganization of the gland. That such pathological conditions might result from mere obstruction, is rendered quite probable from the somewhat analogous condition which occurs in the

mammary gland, when not relieved of its secretion either by the mouth of the child or other mechanical means.

When we recall the intimate relation which exists between the pancreatic and common duct—sometimes running parallel to each other and in direct contact, or the former opening into the latter, or, as is more commonly the case, both opening by a common orifice into the duodenum—in connection with the fact that gall-stones of considerable dimensions are not unfrequently retained for a long period in the excretory duct of the liver, it is not a little surprising that the functional and organic diseases of the pancreas which must necessarily result from these anatomical relations, are so little dwelt upon by systematic writers. On account of the close connection between the head of the pancreas and the excretory duct of the liver, we hear constantly of functional disorders of the latter being induced by enlargement of the former organ; and yet but little mention is made, by most writers on morbid anatomy, of diseases of the pancreas resulting from obstruction of the ductus choledochus by gall-stones or other causes. Rokitansky admits that the pancreatic duct is occasionally dilated by gall-stones impacted in the common duct, but makes no allusion to other pathological changes which would necessarily result from a long continuation of this cause. As tending to fill this void, the case above reported appears especially entitled to consideration.

In regard to the peculiar gelatinous matter found in the peritoneum—entirely distinct from the ordinary products of inflammation—the impression at time of examination was, that the over-distension of the pancreas had ended in rupture of its duct, or some branch of it, and thus allowed an escape of altered pancreatic fluid. This view was formed from the close resemblance, both as to colour and consistency, between the effusion and the gelatiniform condition of the gland. For reasons already stated, this opinion is altogether problematical, the pancreas not having been subjected to a sufficiently minute examination, nor was the effusion tested either by the microscope or chemical analysis. The mere absence of peritonitis would not militate against the above view, since it is by no means inconceivable that death may have been induced, as sometimes happens in case of perforation of the intestine, even before the ordinary evidences of inflammation could be developed. This is rendered still more probable, when it is remembered that the patient was already exceedingly exhausted by a protracted attack of hepatic colic, which of itself, even when uncomplicated by organic disease, has occasionally proved suddenly fatal. A case of this kind is reported by Dr. Stafford (*Lond. Med. Gaz.*, xlv.), which proved fatal in sixty hours, and was attended only by slight congestion of the liver—thus clearly showing that a fatal result may occasionally be caused by the mere shock to the system caused by the passage of a gall-stone.

ART. II.—*Military Surgery and Operations following the Battle of Rivas, Nicaragua, April*, 1856. By I. MOSES, M. D., late Surgeon-General of the Nicaraguan Army.

AN interesting addition to the records of military surgery has been but recently made on our own continent, and in a country to which the eyes of all nations, and especially of Americans, have been turned with eager interest.

The States of Central America, occupying the isthmus between Mexico and the republics of South America, have within the last few years, since the establishment of our immense national interests on the Pacific, attracted the attention of the world. Through them has rushed a tide of population, from the east towards the west, unequalled in the annals of history; which has founded, in the short period of eight years, a State with cities rivalling, in beauty, wealth, and architectural adornment, our oldest Atlantic towns; opened a market for the commerce of the world; and sent back over this same isthmus, in return, not less than three hundred millions of money. Yet, during the same period, this great highway of nations, peopled by a degenerate mongrel race, torn by civil wars and sunken in barbarism and superstition, has hardly felt the influence which has given an impetus to the whole civilized world.

Little over a year since, a new element was introduced into the army of the democratic party of Nicaragua, which rapidly gave it the ascendency. Invited by the new government to take charge of the medical department of the army, now composed of native and American troops, I arrived at Granada, Nicaragua, in February last, and was honoured with the commission of Surgeon-General. No cases of surgical interest occurred until after the battle of Rivas, which was fought on the 11th of April, and lasted about fourteen hours. Small arms were only used—muskets, rifles, and revolvers on the one side, and Minié muskets on the other. A small piece of artillery was taken from the enemy early in the morning, which had been discharged but once; but no wound appeared to have been made by grape and canister, with which it was loaded. The action on both sides was of a desultory character; brisk at first; repelling charges, and sharp shooting from loop-holes. After a forced march of about seventy or eighty miles, with irregular and sparse rations, an annoying fight, without food for thirty hours, it was deemed advisable by the general to retreat, which was safely effected at 2 o'clock next morning. The wounded received their primary dressing during the engagement, and were made tolerably comfortable in a safe place. From the fact of no artillery being used, none of those terrible wounds were received requiring operative interference during the day. About sunset the wounded, amounting to fifty-five, though many of a trivial nature, were removed to the church for safety; and, on the retreat, those who could not walk

were mounted on mules and horses. Some five or six, who could not possibly be removed, were abandoned, and next day bayonetted by the enemy. No litters were on hand, in consequence of the rapidity of our movements and want of means of transportation, and the roads do not admit of the passage of light wagons or ambulances. The wounded did well, and were again dressed and made comfortable at Irandime, thirty-six hours after the battle. They arrived at Granada on the evening of the fourteenth, and were placed in hospital.

In the encounter there were about four hundred and twenty Americans, with one hundred and sixty natives, in the Nicaraguan army, opposed to nearly three thousand Costa Ricans. The official returns reported on our side were: killed and missing, sixty-one, of whom many subsequently reported themselves; wounded, fifty-five, of whom five or six were unable to be removed, and forty-six were sufficiently severe to require surgical attendance. Of these there were twelve officers, and thirty-four non-commissioned officers, privates, and citizen volunteers.

There were wounds of the head and neck . . .	10
" " " arms and hands . .	12
" " " chest	7
" " " thigh and leg . . .	17
Total	46

Of which twelve required operative proceedings, viz:—

Exsection of balls	6
Amputation of forearm	4
" " arm	1
Ligation of left subclavian artery	1
Total	12

As several of the above cases present points interesting to the military surgeon, I propose giving a short outline of some of the more important.

Case I.—Lieut. Potter received a Minié ball about the middle of the left arm, fracturing the humerus and coursing towards the shoulder, from which I extracted it after our arrival at Granada. Wishing to save the arm, and no bad symptoms appearing, it was placed on a pillow for a week. Considerable swelling of the entire limb supervened, with general irritability and discharge of unhealthy looking pus, and amputation was proposed as giving him the best chance. On the morning of the 26th, a fortnight after the receipt of the wound, febrile symptoms of an active character set in, and yellow fever developed itself, with coma, low muttering delirium, refusal to take medicine or nourishment, and black vomit, which terminated the case in a few hours.

Fevers of a malarial character were prevalent, and yellow fever, in the form of a mild epidemic, existed. Unfortunately, the wounded were placed in the same hospital with the fever cases; but most perfect ventilation, abundant accommodations, and strict police existed. I regretted not having amputated

the arm. The bone was comminuted, the soft parts lacerated and contused, but no nerves nor bloodvessels injured. Experience had taught me, and this case has confirmed me in my previous opinion, that in gunshot wounds in which the bone or bones are fractured and comminuted, as is especially the case where the projectile is from the Minié arm, whether rifle or musket, amputation should be resorted to.

Case II.—Maj. Markham, during a charge, was struck by a ball on the inside, and a little above the patella, so as to involve the cavity of the knee-joint, and the synovial fluid was oozing out when I saw him, very shortly after. He rode on horseback during the retreat, but complained of a sense of weight and stiffness more than pain. On arrival at Granada, he was comfortably placed in private quarters; the most absolute rest and abstemiousness were enjoined, and cold dressings applied. He recovered entirely, without any particular inflammation of the joint, and with free motion. His happy recovery may be attributed to his strict observance of rest, an almost starving diet, and his excellent condition for bearing wounds, being a thin, wiry person, of placid temper and gay disposition.

Case III.—Capt. Casey, in the same charge, received a Minié musket-ball through the left wrist, shattering the lower portion of the radius and carpal bones. His wound was dressed, his arm placed in a sling, and he arrived at Granada comfortably, where I amputated at the middle of the forearm. Four days after, he was walking about, and the stump healed most kindly.

Case IV.—Capt. Cook, Quartermaster, wounded in the same charge, the ball entering the left shoulder in front, inside of and below the acromial articulation of the clavicle, taking a course downward, backward, and inward, and was felt just below the inferior angle of the scapula, whence I extracted it the day after our arrival at Granada (14th). He rode, without much inconvenience, on horseback from Rivas, and was comfortably quartered in the house of a native family, from whom he received every care and attention. Of a nervous and irritable temperament, it was impossible to keep him quiet during the day or night; he insisted upon sitting up and walking about the room, although he was repeatedly warned of his extreme danger. He continued to do well, however, until the morning of the 21st, when, while sitting up in a chair to be dressed, violent hemorrhage took place, and he lost a large quantity of blood before it was checked; and, on my arrival, I found him very feeble. Believing that the slough in the course of the ball had made an opening into the axillary artery just after its passage out of the chest, I informed the patient that his only hope was ligation of the artery, to which he readily assented, and I immediately ligated the subclavian at the middle, or very near the first space, it being necessary to apply pressure over the first rib. No hemorrhage recurred, but he soon began to sink, became delirious and restless, his respiration very slow and laboured, and he died at 4 P. M. of the 24th, about *seventy-nine* hours after the operation.

Twenty-four hours previously to death, the shoulder and arm became livid and œdematous. He was fed with stimulants, but, deglutition being difficult, and no prospect of recovery, he was made as comfortable as possible until the final issue.

I regret that circumstances did not permit an examination of the parts.

Case V.—Adjutant Britman, 2d Rifles, received a Minié musket ball in the left arm, in the upper third, while firing his piece; the ball passing behind the shoulder, along the ribs, and through the scapula, lodging near the inferior angle, from which I removed it after our arrival in Granada. His symptoms promised a good recovery for forty-eight hours, when tetanus set in, with severe spasm of the muscles of the face and trunk, and he sunk twenty-four hours after. He had ridden from Rivas without inconvenience; his wounds looked well; no vessels or nerves were involved, and his habits and health had always been good. Brandy, assafœtida, and opium in large doses were administered, but without effect.

Case VI.—Lt. Jones received a ball in the left hip, which entered below the trochanter, and buried itself deeply in the fleshy part of the nates, where it could not be detected by a probe. He was able to move his thigh perfectly, and without pain; he slept well, and was in good condition until the 23d, when the fever, which was prevalent, set in, assumed a typhoid character, and he died on the evening of the 25th with delirium. He was in a separate apartment, surrounded with every care and attention, and fell a victim to the epidemic, which has carried off many a brave man in this city.

Case VII.—Capt. Armstrong received a ball on the outside of the right leg, which passed through the leg, and lodged beneath the integuments on the inside, from which I removed it ten days after the battle. Wound did well, and rapidly healed.

Case VIII.—Sergt. Sarsfield received a wound in the throat, the ball entering just above the articulation of the left clavicle with the sternum, passing directly backward, wounding the trachea and œsophagus, and lodging in the anterior muscles of the spine. He rode on horseback from Rivas to Granada, and was perfectly comfortable, and surrounded by the most assiduous attentions from a native family. The wound was of the size of a dime, through which liquids flowed when he drank, a part only passing into the stomach, mixed with the air as he respired. His voice was a mere whisper. So severe a wound in so important a region called for the most unremitting watchfulness, which he received. The most absolute repose was enjoined, and the most simple articles of diet. The wound progressed well; the slough separated, and there was a discharge of healthy pus, the aperture becoming large but granulating. Cough was the only annoying symptom.

May 3. Up to the present date he has continued to do well; his strength is much diminished in consequence of his strict diet. Contraction has taken place in the œsophagus, and less fluid passes through it. For the last few days he has been supported by enemata of beef-soup, sago with wine, and baths of aquadiente. His cough has been quite troublesome, for which anodynes were given. Hemorrhage, which has been most anxiously feared, began this morning, darkening the ray of hope which I had of his recovery, not a bad symptom having arisen until this morning, the *twenty-third* day. No operative interference could be resorted to, and we could only apply some compressed sponge.

6*th*. Hemorrhage has continued from time to time through the wound, from the nose, and spread beneath the coverings of the neck. Last night he became delirious, and died to-day at 5 P. M.

Case IX.—Finney, citizen volunteer, received a ball in the left shoulder, which lodged beneath the pectoral muscle below the clavicle, from which I

removed it three weeks after the battle. The ball was of iron, and of very large size. He recovered rapidly.

Case X.—Capt. McArdle, while serving a piece of artillery taken from the enemy, was struck by a musket ball in the left forearm, producing considerable destruction of the tendinous tissues, and comminuting the ulna near the joint. Although the wound called for immediate amputation, he was so unwilling that the operation was postponed, and no untoward symptom occurred until the thirteenth day, when suddenly violent arterial hemorrhage came on, and the arm was immediately amputated about the middle, where the bifurcation of the brachial artery was found. The stump did admirably, and in a few days he was up and about.

Case XI.—McPall, of the Rangers, received a shot, the ball striking the inferior maxilla on the right side, fracturing the bone, and passing obliquely through the neck, and out posteriorly on the left side about an inch from the spines of the vertebræ, without any evidence of serious injury to the internal parts. He slept well, eat well, and walked about for ten days, when suddenly, while sitting at the window, profuse hemorrhage came on, and blood in large quantities was poured from the mouth and into the lungs, and in five minutes he was dead.

It is difficult to understand how a ball should have taken such a course without tearing vessels, nerves, and organs essential to deglutition and respiration, yet so capriciously do they turn aside and alter their position when they have lost momentum, that we may explain in this case the total absence of serious injury until within a few minutes of the fatal termination of the case. I saw the patient certainly within three minutes of his attack, when pressure was made upon the common carotid, the internal being no doubt the source of the hemorrhage, hoping to moderate the flow and enable me to ligate the vessel; but death was too rapid for surgical art to avail.

Case XII.—Private Hutchins, while in the act of firing, received a Minié ball, which passed through the left wrist and under the right arm, tearing the soft parts very much, and making a very ragged wound. Under simple dressings both wounds did well, that in the right axilla healing almost completely; but on the fourteenth day after the battle the wrist became very painful, with general constitutional irritability and febrile symptoms; the wound looked foul, and the hand white and pasty.

On consultation it was determined to amputate, and I took off the forearm at the junction of the upper and middle third. Next day he was quiet; had rested well; the febrile movement less marked, and expressing himself very comfortable, and rejoiced to get rid of the hand.

May 2. Is now doing very well, and stump healing.

10*th*. In consequence of some imprudence, fever again appeared, but not of an alarming character, but on the 8th he was reported to me as being worse, and on visiting him with the medical officer in whose charge he was, I found delirium, subsultus tendinum, and great prostration of the nervous energy, and he died delirious the same night.

On examination of the parts, the flaps were adherent throughout, the bone rounded off, and the stump in fine condition.

Case XIII.—Private Lott received a glancing shot sideways, which fractured the lower jaw of the right side an inch and a half anterior to the angle, and tore the soft parts, leaving a large ragged wound. When the wound had nearly healed he was attacked with yellow fever, and died with *black vomit.*

Case XIV.—Sergt. Pittman was struck by a Minié ball in the upper third of the left arm, comminuting the bone, which was followed by effusion, which in a few days produced great pain, general constitutional disturbance, and a disposition to great nervous prostration. He rode on horseback from Rivas, and the day after our arrival, the symptoms not promising more favourably, I amputated high up. He passed that night and next day more comfortably, and recovered with a good stump.

Case XV.—Sergt. Dunnigan was struck by a ball sideways, which cut away in a very clean manner, half an inch in width, the soft tissues opposite the crico-thyroid articulation, but not wounding the larynx. He immediately lost his voice, not being able to articulate louder than in a whisper, and had some difficulty in respiration. He could not swallow solid food for some days, but all the parts healed kindly, and recovery was perfect.

In connection with the above, I would note a case of gunshot wound of the larynx occurring in 1849, showing how much destruction and injury may be done to these parts, and recovery follow. While crossing the plains near Fort Boisé, a corporal of H Co. Rifles was accidentally shot by a fellow soldier at not more than forty yards distance with a conical ball, which tore away the soft parts extensively, fractured the os hyoides, thyroid, and cricoid cartilages, and opening a large hiatus in the laryngeal cavity. The distressing dyspnœa, and other urgent symptoms, induced me to declare the wound mortal, but as we were on march, a canvas tent fly was stretched in a wagon, so as to make him as comfortable as possible. The wound was cleansed, spicula of bone removed, the parts replaced and adapted as well as could be, and cold water applied. Being unable to swallow, his mouth was moistened with water; a hospital steward placed in the wagon to attend to his wants, and we proceeded on our journey. He did not particularly complain during the march, except of heat and dust, and to my surprise I found him in good spirits and hopeful when we halted for the night. It will be sufficient to say that he finally recovered at Oregon City, with an opening in the larynx, and entire loss of voice. He made the journey of about four hundred miles in a wagon, over a dusty road for the most part; but great care was given to the examination and dressing of the wound. Unfavourable symptoms, presenting two or three times during his recovery, were promptly and successfully met. It has been my fortune to have seen several most interesting wounds and injuries about the throat and vocal apparatus, and, except where the large bloodvessels were involved, they have all done well.

Case XVI.—Private Mayer was struck by a small rifle ball in front of the ear, which passed through the cartilages, and lodged behind the mastoid process, from which I removed it a few minutes after he was wounded; applied a light bandage, and he continued fighting during the day.

Case XVII.—Captain Bradly received a small wound just beneath the angle of the jaw on the left side, and applied to have some foreign body removed. On examination, a small piece of metal was found and removed, which proved to be a portion of a small bell. It appears that while in the church, near the altar, a ball struck one of the ornaments, sending the fragments in all directions, one of which had buried itself in his neck.

Of the forty-six cases of which I have notes, there are many of great interest to the military surgeon, showing the course of balls; the wonderful escape of large vessels and nerves; the extent of the reparative process, and how often the severest wounds get well, while the most trifling are the cause of sudden death. Yet, I do not propose, at the present time, to relate them. The hospital, in which the wounded were placed on our arrival in Granada, was a large house, used for governmental purposes, near the Spanish régimé, having, inside and outside, along the corridors, sufficient space; it was well ventilated, and kept in good police. The beds were such as are used in the country, with a hide firmly stretched between the side pieces, rather hard to those accustomed to the luxury of mattresses or feather beds, but admirably adapted to warm climates. Bedsacks filled with dry soft grass and good bedding were furnished to the majority, making them very comfortable. It was greatly to be regretted that the wounded were obliged to occupy the same building with fever cases; but, as soon as circumstances permitted, a separate and distinct house was procured as a fever hospital, to which they were removed; the first hospital being whitewashed, cleaned, and occupied solely by surgical cases. All this, however, could not be effected before there were victims.

Death occurred from secondary hemorrhages				in 3 cases.
"	"	"	tetanus	" 1 case.
"	"	"	fever	" 4 cases.

Among the last, Hutchins, whose hand had been amputated, being the only death among those operated on.

Notwithstanding many depressing circumstances, hot climate and inappropriate hospital diet, no wounds could more rapidly and happily have got well.

From the earliest dressing, cold water was used universally by the officers of the staff who devoted themselves night and day to the care of the wounded, who were never left without one ready in case of accidental symptoms. Yet here, I regret to say, as in other services, no acknowledgment was ever made to those who shared the same dangers in the field with those rewarded by military honours, and whose most toilsome duties were continued for weeks after, while their companions were resting on their newly acquired rank.

I have ever been opposed to the use of poultices as uncertain and offensive applications. To be of use, they should be at least half an inch thick, and changed every three hours. This is often wearisome to the patient, requires the movement of a limb or part which should be kept quiet, and produces an irritability and dread on the part of the patient. It is frequently impossible

to prevent the bed from being soiled by the poultice slipping. All this may be avoided by water-dressings; if cold be most grateful, by a folded linen cloth dipped in water and laid loosely over the part, or kept moist and cool by a drip from a vessel suspended above; if warm be preferred, by covering the wet cloth with oil silk, it soon acquires the temperature of the part and becomes a light and elegant poultice. Various medicinal agents may be thus applied of a sedative or stimulating character.

This dressing is the more applicable in tropical regions, where it is desirable to keep the wounded cool and clean. The months of April and May, in Granada, are the warmest of the summer season, being at the end of the dry period. The climate of Granada is warm throughout the year; the nights pleasant enough for refreshing sleep.

Observations made with the barometer and thermometer during the month of April, showed as follows:—

		7 A. M.	2 P. M.	9 P. M.
Monthly mean.	Barometer . . .	29.89	29.85	29.90
	Attached thermometer .	80.9	91.7	83.
	Thermometer in open air .	80.4	91.1	82.6

The air mostly dry; no rain falling; the sky clear; the wind light and constant from the east. This wind prevailed during nearly six months of the year, and blowing over an extensive swampy region lying to the N. E. of the city, is the source of the malarial fevers which prevail during the summer and autumnal months. During the rainy season, which is perfectly delightful, the prevailing wind is from the W. and S. W.; the rain falling in short and heavy showers in the afternoon and night, often accompanied by heavy thunder and vivid lightnings. It is during these months, from June to November, that Nature adorns the land with her garb of most luxuriant foliage, when the fields of corn and sugar-cane wave most gracefully in the breezes, laden with rich perfume from the orange and gorgeous flowering productions of the land. To enjoy nature in perfection, to realize our sweetest fancies, it is necessary to dwell in the tropics, where trees never know the age of the "sere and yellow leaf," and the fields ever retain their brilliant verdure; where cloudy skies and chilling winds are never felt; where a glowing sun, bright blue sky, and a luxuriant and varied foliage ever smile. Such is the climate of Nicaragua, varying in its different parts to suit the cooler fancies and more material tastes of business men. The city of Granada, on the border of the lake of Nicaragua, is the only unhealthy locality in the State, arising from the causes above related, but comparing favourable with most of our Southern cities. But it is not my intention, at present, to enter in a detail of the climatology and productions of the State.

Gunshot wounds, so rarely presented to the surgeon in civil practice, afford the army surgeon a specialty of great interest, especially when occurring in numbers, where he himself is a witness of them, and has them under his special notice from the time of infliction to their termination in recovery or death.

The miraculous relations of old writers as to effect of windage, spent balls, &c., has been long proved to be fabulous in many of their details, while the introduction of new and more destructive weapons offer a newer and more interesting field of observation, and a class of injuries rarely or never seen, except after a battle.

The introduction of the Minié musket and rifle has created an almost entirely new class of gunshot wounds, remarkable for the distance at which they strike; the great destruction of soft parts; the complete comminution of the bones struck; the greater tendency to secondary hemorrhage, and greater urgency for amputations. Following such wounds is a greater amount of constitutional disturbance; higher degree of inflammatory action; more profuse purulent discharge, and a much more protracted period of recovery; calling on the surgeon for a more patient and devoted attention to his cases and the exercise of a careful and experienced judgment in his proceedings. This class hold an intermediate place between the ordinary wounds of small arms and those produced by artillery, and a full knowledge of both must guide the surgeon in the middle course.

The weight of opinion among British and French Army Surgeons is in favour of immediate or primary operations in all cases requiring surgical interference; but regard must be had to the circumstances in each particular contingency; to the convenience of place, and, to some extent, the anticipated result of the battle during which the wounds are inflicted; but this subject has been so ably discussed by those far more experienced and capable than myself, I do not offer even a concurring assent. Conservative surgery has taught us so much, however, during the last few years as to the power of saving whole limbs by the exsection of joints, that we may, under the most favourable circumstances, preserve for our patients important members which our teachers, not long since, would have condemned to the knife. To the records of the late European campaign, and the experience arising from so vast and instructive a school, we most respectfully look for our most instructive lessons.

In a subsequent paper, I propose to give a short account of the topography and climatology of the State, and the prevailing diseases among strangers and the native population, and the influence of *tropical climates generally* upon Europeans. Long since, I had doubts of what is termed "acclimation;" but personal experience, confirmed by that of several highly intelligent medical men, has taught me that it is rare. Individuals may accommodate themselves to the habits of a people, and even enjoy a good degree of health; but, both physically and mentally, they degenerate.

The active and exposed duties of the soldier, however, rapidly tell upon his effectiveness. I have seen troops in Texas, where military service has been severe, exercise on scouts and guard, under the influence of a tropical heat, actually wilt down, and for months remain feeble, pallid, and dejected. Such, too, has been the experience of the army surgeons in Florida. To keep

troops for a series of years in such a climate, with the idea that they will become inured and insusceptible to its influences, is an egregious fallacy. The same remarks apply equally to females and children, inducing, among the first, obstinate forms of uterine and vaginal diseases; and, in the latter, convulsions, diseases of the stomach and bowels, and even paralytic affections.

But, with these preliminary remarks, which are made rather to suggest thought upon the subject among those having opportunity of observation, I will close my paper, trusting to a more able pen for further teaching upon so interesting a topic.

New York, *September*, 1856.

Art. III.—*Case of Exostosis occupying the Orbit and Nasal Cavity, successfully removed, and Vision restored.* By Alexander B. Mott, M. D., Surgeon to "St. Vincent's Hospital," and the "Jews' Hospital in New York," &c. &c. (With a Plate.)

Tumours in the orbit, combined with exostosis, have long been familiar to every surgeon of experience. Sir Astley Cooper, in his *Surgical Essays* (part i. p. 157), in the earlier part of the century excited considerable attention by the narrative of one which proved fatal in consequence of making its way through the orbitar process of the os frontis to the brain; and Mr. Guthrie, the celebrated English military surgeon who has lately been removed from the world of science, records others which especially attracted his notice. One of these, however, was on a very small scale, not exceeding in dimension the size of a large marble, a point at which it seems to have remained stationary; while a second, of larger growth, effectually resisted the application of the actual cautery, which seems to have been the only mode of treatment that suggested itself to the practitioner. On the continent of Europe we find numerous cases detailed by Brassant, Langenbeck and others in the various scientific journals of France and Germany, all of which were accompanied by more or less displacement of the eye. But I am not aware of any so extensive as that which fell under my observation in the following instance; and though Mr. Guthrie, on finding the cautery fail, afterwards proposed the use of the saw and chisel, I believe my operation will be found original.

The patient, William Hoy, aged thirty-three, a native of Edinburgh, Scotland, and a wood-turner by trade, had about seven years previous to his applying to me for advice, noticed an enlargement towards the inner canthus of the left eye. His previous health had been good, though he had been subject to headache, and his attention was first drawn to the seat of disease by inflammation around the part, and a troublesome flow of tears over the cheek. About eighteen months after he first noticed the tumour, the left

nostril was closed up, and he then applied for relief to a surgeon of Edinburgh, who passed a probe up that cavity; but the only effect of this was to excite great pain in the head and produce an extensive swelling on the side of the face. Professor Syme next examined it, but proposed no operation. At this time the tumour did not occupy the socket of the eye; but it gradually increased in size, pressing that organ to the outer canthus and impairing its vision. Nothing, however, appears to have been done; and, in this condition he progressively went on from bad to worse until, having in the interval emigrated to this country, he applied for my advice and assistance in the month of April, 1854. About two months previously, a discharge of bloody matter had taken place from the left nostril, and continued to a considerable extent night and day subsequently. The pain in the head had also become very violent, and prevented him from attending to his work. About a month after the discharge from the nostril the eyelids became swollen, and an abscess formed under the lower lid, towards the inner canthus. On passing a probe through this opening, the bone could be distinctly felt, and its existence in the nostril was also equally evident.

It was on the 11th of April that he first applied to me, and on examination I concluded that the disease was a case of exostosis occupying the left nasal cavity and orbital foramen. The extent of the growth of bone could not be felt, but, from the duration of the malady I inferred that it penetrated far into the socket and was firmly attached to the orbital plates. I informed the patient that in my opinion nothing but an operation would afford him relief, and that it was an operation which might involve his life. I considered it my duty also to apprise him that it was impossible to predicate a successful result, as the extent of the disease could not be ascertained; but he was suffering so much at the time that he expressed his resolution to run the risk and have it performed. As he was living in a boarding-house, where it was not probable he could be attended to with the requisite care, I advised him to become an inmate of St. Vincent's Hospital, where I then was on duty. He entered it on the 19th, and on the following day I removed a number of polypi from the right nostril, with the view of enabling him to breathe freely through this channel, lest the other should be closed by the operation, which I determined to perform on Saturday the 22d.

Although the patient came under my charge as a private individual at the hospital, I considered it due to him as well as myself to call a consultation of my professional colleagues composing the surgical staff. This, I may premise, is one of the advantages attendant on an institution founded on the basis of St. Vincent's. According to the rules of the establishment, each member of the medical or surgical board possesses the privilege of introducing a private patient at any time and treating him within the walls of the edifice. He has thus the benefit of the collective advice of the establishment, in addition to the admirable care bestowed upon him by the beneficent Sisters of Charity who preside over the institution, and devote their attention to the

alleviation of the sufferings of the diseased and the sick with an earnestness and a zeal truly worthy of their name. The consultation on the present occasion, however, was not unanimous. Almost the whole of my professional brethren there considered the issue of an operation as doubtful, inasmuch as it could not be ascertained to what extent the disease had invaded the orbital foramen, or what strictures the bony attachments involved. To one less accustomed to operative surgery, and with less experience in cases of emergency, such doubts in the minds of the eminent individuals who constituted the board, and of others, might have been productive of hesitation; and, under ordinary circumstances their opinion as to the impracticability or impossibility of removing the whole of the bony mass might have caused me to pause, if not abandon the design. But feeling confident that in undertaking the operation I should give the patient the sole chance he had for the prolongation of his life, and he reposing the most implicit confidence in me in return, I determined to proceed; the more especially as I knew it never could be attempted under circumstances more advantageous.

Having resolved to operate, I proceeded in the following manner to carry out my design. The patient being placed on a bed was brought under the influence of a mixture consisting of equal portions of chloroform and sulphuric ether, which in such cases I recommend. I then made an incision from the ala of the nose in a direct line upwards to about half an inch above the superciliary ridge, and afterwards a transverse one from the centre of the upper eyelid across the nasal bone to the opposite eyelid, terminating in a line with the inner canthus of the right eye. The four flaps thus made were next dissected up, beginning at the points where the incisions intersected each other, and carefully extending through all the tissues to the bone. Upon raising the flap nearest the nose, it was evident that a large portion of the osseous mass extended into the nasal cavity, and it consequently became necessary to remove the whole of the fleshy portion of the nose from the nasal bone of the left side. This being accomplished, I dissected the opposite flap clear from the tumour, keeping as close as possible to the bone in order to avoid wounding the eyeball or its surrounding tissues and their attachments. This too being done, I found the bony tumour was firmly impacted in the orbit and nasal cavity. I consequently separated the nasal bone of the left side from its fellow of the opposite by means of a strong pair of Liston's bone-forceps, and, with a fine straight flexible saw detached it from its frontal attachment. By a little manipulation I was thus enabled to remove the portion represented in Pl. I., Fig. 3; and, on accomplishing this, I next by means of a delicate chisel and hammer gradually detached the other bony mass represented in Pl. I., Fig. 4, from the orbital plate of the frontal bone, and also from the orbital plate of the superior maxillary. The os unguis was so thoroughly incorporated with the tumour that I was obliged to remove it along with the mass; and the whole being now somewhat movable, I made a slight traction by means of a pair of strong forceps.

A few more cuts of the chisel enabled me to withdraw it; and, to my own great satisfaction, as well as the astonishment of all present, I discovered that the orbital plates had not been injured. Had these been so, I need not say the result would have been most serious: the brain would have been exposed, and it would have been almost impossible to have avoided a fatal issue. But this danger was happily evaded, and all now went on comparatively easily. On removal of the tumour from the orbit, a slight discharge of pus took place; accounting in some degree for the pain previously experienced in that cavity.

The next important point which presented itself for my consideration was the restoration of the eye to its natural and original position. From attempting this I was dissuaded by some of the professional gentlemen around me, from whom I had derived valuable assistance during the operation. They recommended that the cavity should be filled in with lint; but, desirous of doing all in my power for the benefit of the patient, and seeing no reason why the eye should not be replaced—considering also that there was every probability of its coverings adhering, there being two raw surfaces to be brought in contact—I replaced the organ and drew the edges of the wound together by means of interrupted sutures and adhesive straps. A bandage was next passed around the head, containing a small compress which was placed over the eyeball. The latter was thus retained in its natural cavity; my object being to fill up the orbital foramen and have union by the first intention.

To Prof. Mott, Drs. Van Buren, Schmidt, and Finnell I am much indebted, both for their good counsel and able assistance in this formidable operation.

The patient having now recovered from the effects of the anæsthetic, was placed in bed and left for some hours to repose. Nothing worthy of notice occurred in the interval. In the evening I visited him; and, as he was suffering some pain, though no vomiting had occurred, I directed twenty drops of Magendie's solution of morphia to be administered to him and repeated, if necessary, during the night.

April 23. In the course of the day I visited him twice, and ascertained that he had taken a second dose of morphia as well as slept part of the night. I directed mild diet to be given to him.

24*th*. On returning this morning I learned that he had slept well during the previous night, with the aid only of a small anodyne. I ordered some light nourishment for the day.

25*th*. This morning I found the patient had slept well without the anodyne and felt comfortable.

26*th*. To-day he was a little feverish. Having an amputation of the leg to perform in the same ward, I was under the necessity of ordering him to be removed to another room. This increased the fever, and on the following day, the 27*th*, the pulse was 110. I consequently ordered a gentle aperient and low diet to be given him.

28*th*. The fever continued. Erysipelatous inflammation had also appeared

on the cheek, and during the day it extended over the nose. I loosened the dressings. No discharge ensued. Applied tincture of iodine for some distance to the sound skin around the inflamed surface, and ordered the face to be kept powdered with scorched rye flour. I also directed ten drops of the tincture of muriate of iron to be administered to him every two hours.

29*th*. This morning I ascertained the patient had not rested well during the night; but the fever was less, and the erysipelas had decreased on the nose, though it extended over the jaw. I consequently ordered fifteen drops of the tinct. ferri mur. to be given every two hours, and in the afternoon administered the same quantity every hour. In the evening I had the satisfaction of finding that the erysipelas had left the jaw, and was now confined to the forehead. Still, I considered it prudent to order the same treatment to be continued during the night, but directed a more generous diet to be given, and a little porter.

30*th*. The fever had diminished, and the erysipelas was confined to a small spot on the head; but the patient was much debilitated. I consequently ordered the porter to be continued, with strong beef-tea, &c., but did not deem it expedient to interrupt the administration of the tinct. ferri mur. I considered, however, that I might now with safety remove the dressings, as well as take out the stitches; and, on effecting this, was gratified to find that the wound had entirely healed, with but very little discharge of pus from the nostril. Adhesive straps and a little lint were applied constituting the second dressings.

May 1*st*. The erysipelas had now completely disappeared, but the patient continued very much debilitated, and required stimulants with good nourishment frequently during the day.

2*d*. He still remained very weak; and this condition having now continued several days, it became necessary to give him a large quantity of stimulants and nourishment. It was now that he experienced, to its fullest effect the benefit of the Institution into which he had had the good fortune to find entrance. To the devoted attention of the kindest and best nurses in the world—the Sisters of Charity—who follow directions to the letter, and feel a deep and earnest interest in the sick, this man may in some degree attribute his recovery. Too much cannot be said in favour of these truly pious ladies. Sacrificing themselves to the cause of humanity, looking for no reward in this world, they deserve all they can desire or anticipate in the world to come. None can appreciate them as they should be appreciated, save those who have been the recipients of their sedulous attention, or have watched them at the bedside of the sufferer. Day and night they are at their posts, anxious to devote their all to the relief of suffering humanity, and bestowing their care wholly irrespective of country or creed.

Secondary to the recovery of the patient from so formidable and dangerous an operation, the most gratifying result in this case is the fact that the eye, which had for several years been gradually but completely pressed out of its

regular position, was eventually replaced; and that the vision, which had been totally lost for several years, was perfectly restored. So soon as he was able to sit up—that is, about sixteen days after the operation—the patient called my attention to his eye, which appeared to move naturally, and to his astonishment he found that he could distinguish objects, although not very distinctly. His sight continued to improve, as well as his general health; and in about a month he was able to leave the hospital entirely cured.

From time to time I have seen him since, and observed with pleasure the gradual improvement in his vision. In less than three months after the operation, the sight was as good in the eye operated upon as it was in the other, and his personal appearance was much improved. The eyeball had resumed its natural position, and, when I last saw him, the scar on the face was scarcely perceptible.

The annexed drawings, Pl. I., will afford some idea of the case, both prior and subsequent to the operation. Fig. 1 represents the appearance of the patient before the operation, Fig. 2 his appearance four weeks after the operation. The tumour, which is of a dense osseous substance, is represented, Pl. I., Figs. 3 and 4, one-half natural size. Its weight is three ounces and one drachm. I am not aware of any similar case in the annals of surgery.

Many instances of exostosis are of course on record—this being unhappily a prevalent form of surgical disease—and Sir Astley Cooper, as I have already remarked, has detailed one of an analogous order which affected the bones of both orbits. In his case, however, it was allowed to prove fatal by extending into the brain, whereas in the present instance the disease has been wholly arrested by a timely operation, and up to the present moment there is not the slightest indication of its recurrence. It was besides accompanied by peculiar circumstances. The occurrence of erysipelas at the critical moment in which it appeared might, but for the prompt treatment adopted, have been attended with the same fatal results which have so often marked its course. In such instances I cannot too highly extol the peculiar virtues of the tinct. ferri mur. In the present case the patient was utterly prostrated by the effects of the erysipelas; but to its vigorous and unhesitating exhibition he is mainly indebted for his recovery. Secondary only in importance and anticipation was the restoration of his vision. The eyeball had been so long displaced that few would have looked to such a result; and it affords me subject for congratulation that, contrary to the opinion of my distinguished colleagues at the hospital, I determined to replace it, though at the moment I assuredly never expected that this resolution would have been attended with a success so agreeable to the patient as well as to myself.

209 Tenth St., New York, *November*, 1856.

Fig. 1.

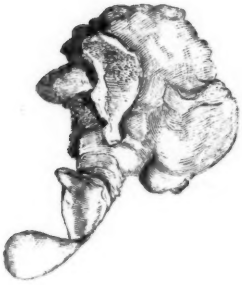


Fig. 3.

Fig. 2.

Fig. 4.

Dr. Mott's Case of Exostosis in Orbit and Nasal Cavity.

ART. IV.—*Rupture of the Right Rectus Abdominis Muscle from Muscular Efforts— Operation and Recovery, with Remarks.* By SAMUEL B. RICHARDSON, M. D., of Louisville, Ky.

BEFORE breakfast, and shortly after a healthy evacuation from the bowels, on Friday morning, February 29, 1856, Mr. B——, a healthy athletic young man, aged 28 years, in a half playful mood, hopped over a *narrow* ditch. *Immediately* after this effort, he was seized with acute, persistent pain about two inches below and to the right of the umbilicus. Simultaneous with, or rather just preceding the access of pain, he heard a distinct sound or *snap*, like the crack of a whip. Nausea, with a constant desire to evacuate the bowels, supervened and persisted.

Dr. John N. Lewis, of St. Matthew's Post Office, six miles east of Louisville, and about one mile distant from the residence of the patient, was called to see him soon after the accident. Finding him as described, he administered an enema *without* effect, and then ordered a dose of magnesia sulphas.

Saturday, March 1. Dr. L. found his patient with an aggravation of the symptoms existing the day before—without an action from the bowels—the saline solution, and everything else taken into the stomach, had been thrown up as soon as swallowed. Under this state of the case I was requested to join Dr. L. in conference at an early hour, which I did at 12 o'clock M. The condition of the patient was as above described, in addition to which there existed a flat intumescence or tumour in the region of pain, discovered by Dr. L. at his first visit, but now much augmented in size and extent, with very marked rigidity and increased sensibility all over the abdomen. It was agreed to apply twelve leeches over the tumour, followed by ice cap, after the bleeding ceased, and to administer chloroform by inhalation, *pro re nata.*

2*d.* Met Dr. L. again, at an early hour; patient's condition more aggravated than before; has *not* slept, he says, since the accident; vomiting very frequent since midnight, with constant nausea; leech-bites continue to bleed, manifestly reducing the force of the heart's action; there is a feeling of prostration, with headache; tenesmus persists.

After arresting the hemorrhage from the leech-bites by cauterization, it was agreed not to delay an operation, expecting, as most likely from the signs and symptoms present, that we should find a strangulated ventral hernia. I asked the question, before operating, if muscular and tendinous lesion might not be the condition? The answer to which was a decided negative by Dr. L. and Dr. John Hardin, the latter of whom I met on my way out of the city, and invited him to be present at the anticipated operation.

After confession and the eucharist (a papal priest having entered the room shortly after our arrival), I proceeded to operate—the formulary of which was not very dissimilar to that for incarcerated umbilical hernia.

After dividing, by a crucial incision made over the most prominent portion of the tumour, and extending somewhat beyond its limits, the integuments, subcutaneous cellular tissue, fat, and superficial abdominal fascia, a number of small coagula of extravasated blood were brought into view about the size of grains of corn; the tumour now became more apparent and tense. Expecting rather to find a hernial sac beneath, the *fascia profunda abdominis* was elevated slightly with a tenaculum and opened by horizontal movements of the knife, and such was its tensity that it almost split in advance of the scalpel as this was carried along the groove of the director.

This section completed, brought into view a large coagulum of dark, black blood. This, upon its removal, was found to occupy an irregular cavity very like that of a diffused false aneurism. It was supposed, by estimate, to weigh about one-half of a pound, resting and pressing posteriorly and deeply upon the peritoneum and bowels.

The peritoneum was found uninjured, advancing forward or rising as the bloody mass was removed. Upon clearing the exposed cavity of its bloody contents, the extraordinary nature of the injury was clearly revealed. The right rectus abdominis muscle entire, with the corresponding epigastric artery and its accompanying vessels and nerves, as well as the sheath of the rectus muscle, were torn completely across, and their ends retracted and separated one and a half to two inches. The precise point of rupture was a central one between the right linea alba and linea semilunaris, and the linea transversa which intersects the umbilicus, and the linea transversa next below it.

One artery only was tortioned—none ligatured. The anæsthesia developed by chloroform and continued during the operation, which lasted from fifteen to twenty minutes, was very perfect and satisfactory—the patient sleeping, happily, and almost unconscious of what was done, and in due time emerging from its effects without any manifest over-congestion or injurious effects upon the nervous centres. Warm-water dressing was applied, and directed to be continued to the wound, with morphia internally, and repeated if required.

Tuesday, 4th. Another conference requested; patient not regarded as in a satisfactory condition. After meeting, removed the dressings and found another coagulum occupying the cavity of the wound, resting, as the first, upon the peritoneum; not so large as the first; some fluid blood discharging from the wound. He slept some during the past forty-eight hours, under the influence of morphia, which has been administered at intervals since operation. No action of the bowels for four days (or since accident); tongue furred; pulse 82, and slightly tense; abdominal tenderness diminished; bladder evacuated spontaneously; no appetite; thirst continuing, but no vomiting since afternoon of the day of operation; some nausea; tenesmus not so great, though yet present. We agreed to give five grains of calomel, to be followed in six hours with Seidlitz powders; and, after the action of the bowels to resume the morphia.

25*th*. Patient has been doing well; he walked about his room the third week after the operation, and came to the city; has taken occasional saline aperients, and a few doses of morphia at bedtime; appetite good. The wound, upon examination, is found to be closed through most of its extent, mainly by granulation; depressed granulous surface in the centre of the wound; no hemorrhage from the wound since the 4th inst. A depression will most probably always exist at the seat of injury.

Remarks.—I have not met with a similar case to the above in my practice or reading, and I have consulted *all* the English and French surgical literature on the subject, contained in my moderately full private library. In tome 20, *Dictionnaire de Méd.* (30 vol. edition), pp. 360–62, I find reference to such an accident, but no detailed case.

The article in the dictionary referred to, is by Olivier, and as it contains the *only statistics* of *muscular lesions* within my knowledge, I will here translate and append it to this article for the convenience of those who may not have access to the original.[1] *Diagnostically* and *pathologically*, as

[1] "*Rupture of Muscles.*—Well established examples of this accident are not found recorded prior to the conclusion of the last century. It is to the labours of Roussille-Chamseru, and of M. Sédillot (*Mém. et Prix. de la Soc. de Méd. de Paris*, 1817) that we are indebted for the knowledge possessed on the subject at the present time. Many authorities have supposed that *tendons alone* were susceptible of being broken, and Bichat, in his *General Anatomy* (tom. viii. page 153, Paris, 1801), endeavours to explain this phenomenon by supposing that, when a rupture occurs, the fleshy fibres are in a state of contraction, whilst those of the tendons are passive, the former thereby possessing greater density than the latter are least likely to yield. M. Sédillot has proven the unsoundness of this theory of the great anatomist, by collecting a number of well established cases, in which the solution of continuity was confined to *the fleshy fibres alone.* 'These lesions,' he says, 'are always due to a sudden and unexpected effort, which puts into forcible contraction certain muscles, or portions of muscles, whilst the remainder of the organ and its connections are in a state of relaxation. The fibres thus contracted not having the power to resist successfully their antagonists, or against the resistance placed at their extremities, and ceasing to exert any power, experience a *forced* elongation, resulting in their rupture.' (*Mém. Cité.*) Whatever value may be attached to this explanation, compared with the one referred to before—in summing up the twenty-eight observations embraced in his work—M. Sédillot states that in *twenty-one* cases, where the seat of the lesion *is indicated, thirteen* of them took place at the point of insertion of the *fleshy fibres into their tendons*, and in *eight* the lesion was found to have occurred in the *body* of the muscle itself. Boyer and other authors have reported analogous facts.

"This accident occurs, as we have already stated, with much less frequency where great and *sustained* efforts are made, than in *automatic, sudden* and *unexpected* movements; for instance, to prevent a fall, avoid a shock, &c. &c.

"The muscles most exposed, or liable to rupture, are those of the *calf of the leg*, the *straight anterior muscle of the thigh*, the *rectus abdominis*, the *psoas*, and the *deltoid*, &c.

"The sudden and involuntary contraction which occasions the rupture is ordinarily interrupted by an instantaneous sharp pain, which indicates the precise moment of the

well as the operative procedure employed, this case furnishes much of interest and of *practical* importance. By its teachings, it is evident that this accident might be *confounded* with other grave pathological states—as hernia, intussusception, lesions of some of the abdominal contents, &c. &c. *Without* an operation, we may conclude that an *abscess* would have formed in the site of the muscular rupture (*irritation* not destroying life too soon, as it threatened to do), and pointing and opening internally, thereby developing *fatal* peritonitis.

The entire subject of the *union of divided muscles*, whether from trauma or by muscular action, the nature of the process set up by the vital organism

laceration, and arrests the movements of the part involved. If let alone, the pain persists ordinarily a considerable time—sometimes for a week, but with diminishing intensity. This accident is very often accompanied by a *peculiar noise*, occasioned by the rupture of the muscular fibres—compared to the snap of a whip. When a considerable number of the fleshy bundles have been torn, or where a muscle has been ruptured transversely through its entire thickness, there exists at the seat of injury a *depression* proportioned to its breadth and depth, which depression is increased or diminished as the injured organ is put into a state of extension or relaxation. This condition is sometimes observed at the moment of injury—sometimes afterward—the effusion of blood which results from the tearing of vessels, determines an ecchymosis and *swelling* sufficient to *mask* the depression, but the signs of sanguineous effusion rarely occur before the lapse of twenty-four to forty-eight hours after the injury, and do not cease before the termination of the first week.

"Recovery rarely occurs short of many months, when muscular rupture is abandoned, or receives no treatment. And here, as in external wounds, cicatrization is effected by interposed cellular tissue, assuming a fibrous aspect. These injuries do not give rise to serious results unless the lesion is extensive, or some deep muscle of the trunk is involved. In reference to prognosis, the case of a young man is reported, who ruptured the psoas in raising a tub. High inflammatory action supervened, terminating in abscess, &c. &c., and finally death. (Sédillot, *Mém. Cit., et* Boyer, *Traité de Chir.*, t. xi. p. 89.) This observation being very incomplete in regard to the pathological anatomy, it is impossible to know whether the numerous phenomena observed were the consequence of rupture of the psoas alone.

"The means adapted to favour union of ruptured muscles are, position, repose, bandage, and others to meet the symptoms. The ruptured muscle should be placed in a state of relaxation by positions of the limb: if the lesion is considerable, involves a voluminous muscle, or many muscles, or *deeply* situated ones, as the psoas muscle; or, finally, if the subject is very irritable, the member should be kept in almost absolute immobility during eight or ten days. Compressive bandages are the most appropriate means for maintaining quietude, applied as methodically as the nature of the injury will permit. The experience of M. Sédillot, according to his reported cases, proves the superiority of this 'appareil,' and it is not easily understood why other authors on this subject have not insisted more upon its adoption. Compression favours relaxation of the muscle, approximates the ends of the divided organ as far as it is desirable, resists new contractions, and finally facilitates the absorption of the effusion and resolution of the engorgement. Should the engorgement be very great, with the supervention of febrile or inflammatory reaction, general and local bloodletting, fomentations, poultices, &c., should be resorted to."

PROF. MEIGS' CASE OF DOUBLE-HEADED MONSTER.

From nature on stone by Henry A. Daniels Phil.a T. Sinclair's lith, Phil.a

to accomplish it, as well as the nature of the new bond of union, &c. &c., are all brought under consideration in the study of this case. For an observation on this subject, with remarks furnished by myself, in which I had an opportunity of examining the structure uniting a divided muscle of considerable magnitude, the interested reader is referred to the *Transylvania Journal of Medicine*, 1837–38. In conclusion, it may be inferred that *hernial* protrusion *might* occur through the cicatrix of a united rectus-abdominis muscle.

Louisville, *Sept.* 4, 1856.

Art. V.—*Case of Double Fœtus.* By Charles D. Meigs, M. D., Professor of Midwifery in Jefferson Medical College, Philadelphia. (With a plate.)

In the number of this Journal for July, 1855, I gave some account of a specimen of hepatodym children presented to me by Dr. G. W. Bœrstler, of Lancaster, Ohio. The account was illustrated by two lithographs from Root's daguerreotypes.

The present case is illustrated by a drawing on stone, by Mr. Daniels, a clever artist, now much occupied in this city.

I am indebted for the fine specimen to the great liberality of Dr. S. M. Ross, of Darlington, to whom my sincere thanks are due for so great a kindness.

The figure, Pl. II., exhibits a faithful representation of the double fœtus, seen in front.

The genital organs are female.

The right eye of the right and the left eye of the left fœtus are perfect; while the right eye of the left and the left eye of the right fœtus are fused together into one single eyeball, covered by a compound palpebra with three canthi; the fused inner canthus being in the middle of the lower eyelid. All traces of the outer canthi of this compound eye are lost.

In the fusion of the heads, the left and right ears of the right and left fœtuses are lost, with the exception of the small tubercle seen in the middle of the faces. The left fœtus has a double hare-lip, and the right one a common hare-lip. The calvaria are deficient in both the children, so that they are anencephalous. There was also failure of development of the spinous processes and bridges of the cervical and dorsal vertebræ, giving rise to spina bifida of both the dorsal and cervical ranges, while the lower lumbar and sacral vertebræ are perfectly well developed.

This circumstance is interesting, showing, as it does, that the simplicity apparent in the two well-formed arms and legs, and the single trunk, is nevertheless a real duality of individuals. The dark dermoid excrescence that covers the top of the head is too imperfect to contain any hair-follicles; so

that only a few scalp hairs are seen, as in the figure, growing from the very upper part of the forehead.

There is but one navel and umbilical cord; yet, doubtless, on dissection, one would find a double ductus venosus, since it is impossible to conceive of absolute simplicity in the liver. On the contrary, the liver, however intimate the union of the livers of the two children, must retain the characteristics of its duality. Neither of these children, in an embryo state, could have existed without its omphalo-mesenteric system of vessels. Indeed, I cannot conceive of a liver as antecedent, in time, to the omphalo-mesenteric apparatus, but rather as secondary to it. The liver is really constructed by the mesenteric or portal system, aided by the hepatic, a branch of the cœliac artery. This being the case, I take it for granted that the livers, however complex they may be, making this a hepatodym, must be two, not only in name, but in fact. The compound or dual face, with its two independent mouths, shows that there are two fauces, a pharynx for each, and a more or less distinct œsophagus; and, possibly, separate stomachs.

I have not dissected the specimen, because I consider it most valuable as a museum specimen, and because Prof. Serres, in his *Anat. Transcendente*, has given us the anatomy of analogous forms so completely as to leave us nothing to desire.

In my paper on Dr. Bœrstler's specimen (this Journal, July, 1855), I accounted for the singular place and appearance of the posterior leg by showing that the peculiarity was due to a partial loss of the anterior portions of the left and right fused acetabula. In the present instance, the duality of the face is due to the mode in which the cephalic regions of the two embryonal membranes were approximated; that is, the faces were somewhat averted: perhaps horizontal antero-posterior diameters of the two faces might leave an angle of twenty degrees. This was enough to ruin by engrafting the left and right eyes, and totally to destroy the left and right ears. What a riddle would result if these horizontal antero-posterior diameters of the two faces could have been parallel! In that case, it might be impossible, from external inspection, to say whether the being were single or double. We may conceive that two embryos should come together, side by side, in the womb, and be so accurately in contact that each should lose by default one absolute half of its form; having two eyes, one nose, mouth, and chin, two perfect ears, and a head in all external characteristics well and completely formed.

But there is a bound set to the human imagination. Salmacis might clasp her lover in her arms, and implore the gods to make of them one body; but the pranksome deities of Greece and Rome had no powers equal to such transformation: indispensable duality of the livers is an insuperable bar to the metamorphosis that the nymph prayed for.

As I have declined to make a dissection of this specimen, I am not able to say what is the state of the sacrum—as to whether single or double. I can detect no signs of a third or fourth leg anywhere beneath the integuments;

and, as the two acetabula are apparently completely lost in the mutual arrests, I infer that no vestige of a left leg for the right, or a right leg for the left fœtus exists.

December 7, 1856.

ART. VI.—*Case of Nymphomania successfully treated.* By JOHN TOMPKINS WALTON, M.D.

I WAS called, February 5, 1856, to see a girl named Catherine, who was described as being "in a fit." She was found to be in a paroxysm, the agitations of which were at once peculiar and revolting. Her countenance was distorted, face flushed, conjunctiva injected, pupils fixed and contracted, and pulse turgid. This paroxysm was peculiar and specific in the expression both of countenance and figure—in the lascivious leer of her eye and lips, the contortions of her mouth and tongue, the insanity of lust which disfigured her face, and made it fearful in conveying the expression of such intense suffering and anxiety as it portrayed, as well as in the positions she assumed and the movements which could not be restrained. My presence at first, as I was the only male present, increased the energy of her convulsions; but, using the "*passe mesmerique*"[1] in connection with the external applications usually employed, she soon began to recover; however, ere the agitation had subsided, her frame was again convulsed with frightful vigour. Though the mother said that the girl had been previously treated for an eclampsia, I had no doubt at all of the nature of the case, and acted upon a hint derived from Prof. Jackson, who, in the University course of 1850–51, in relating the fact of housewives effectually checking the morbid desire to incubate by plunging the posteriors of the hens in cold water, suggested that it might be advisable to pursue the same plan with women when in a condition of ungovernable sexual excitement. Upon that hint, I ordered a cold hip-bath to be given her. She was forced sitting into a tub of cold water, retained there for a few minutes, and then taken out in a general torpidity of mind and body, with feeble pulse, imperfect aëration, and an almost perfect coma; but, after being thoroughly dried by friction with coarse towels, reaction ensued before I was able to return to the house. ℞.—Ext. conii, pulv. opii, āā gr. j in pil. was then exhibited. This was at about 8 P.M. At 11 she was in a sound sleep, with countenance, pulse, and skin undisturbed. The next morning she was in her general health. I then endeavoured to learn something of the history of the case, but could only ascertain that she had endured similar attacks

[1] This course of action, when accompanied by a calm, steadfast gaze, soothing words, as well as by passes over the face, head, and breast, has been usefully employed in hysteria and other nervous affections.

during the past year, that these had increased in frequency and violence, and that this last had been the most severe of any ever experienced. The only suspicious circumstance was, that they always occurred when she was alone or with those known to be lewd.

The patient was a well-proportioned girl of seventeen, of a sanguine temperament, possessed of an ingenuous countenance and pleasing deportment; but her small eyes, the arching of the internal canthus, the drooping lid, the sharp outer curving of the upper lip, which itself was as thick as the inferior one, the large, broad nose and chin, the disproportionate size of the posterior portion of the head, as well as the general development of her frame—these all evinced that the primary cause of the disease arose or was seated in her animal organization. Her defective education, mode of life, vulgar comrades and associations, the exposure and contagion incident to several families living in one house, with a hydrant and water-closet shared by all the court, and the immorality of the youths who lounged about the place, were strong corroborating evidences of the cause of her affliction. But though the mother was suspicious, she had no positive knowledge of any criminal conduct or unchaste habits on the part of Catherine, nor till near the end of March, even in a private interview, would the girl admit that she was a wanton, or even addicted to manustupration. A vaginal examination was made, when negative evidence as to her virginity was presented in the distension of the organ, the presence of the carunculæ, and the flaccidity of the nymphæ. From the size of the labia minora, the irritability of the mucous coating of the vulva, the morbid delicacy of the clitoris, together with the existence of a leucorrhœa for many months, without there being any morbid condition of the uterus or discoverable lesion in the vagina, or any symptomatic testimony to invalidate the diagnosis, I concluded that she had been addicted to *attouchement*, and that she was unchaste. Without imparting my suspicion, I simply advised the mother, who was suffering from mental agony, to closely scan the daughter's conduct; and, frightening the girl with the terrors of an early and horrible death, or of repeated returns of her distressing malady, got her to obey the prescribed routine. At my solicitation, the mother called in their clergyman, to whom, as he was a man of honour, I imparted the suspicions entertained of the girl's depravity. It may be as well to state here that her after-admissions confirmed the diagnosis; she confessed her addiction to masturbation, stating that her appetite was insatiable, and that her mother watched her so closely as to prevent sexual fruition save at rare intervals.

Understanding the disease to be an insanity of the venereal desire, the indication was plainly to subvert that morbid appetite by rendering her emasculate for a time, as well as to assist such endeavour by attention to her habits of life, so as to destroy the force of the associations which had accumulated during the period of riot and madness. This last, the circumstances of the family prevented me from fully accomplishing. Having the aid of the mother and priest in undertaking to correct any lesion in her *morale*, the *physique* was

attended to as follows: For the leucorrhœa: ℞.—Argenti nitras gr. x; aquæ destil. fℨj.—M. Sig.—Injectio per vaginam. This was used, with the hope that the change created by the caustic on the mucous membrane might also lessen its sensitiveness. Injections of cold water, combined with an astringent, were afterwards used daily. These topical agents were assisted by a vegetable diet, regular exercise, and more decorous behaviour; whilst the constitution was being influenced by—℞. Extractum dulcamaræ ℈j; extractum nucis vomicæ gr. v; pulveris camphoræ ℈j.—M. et divid. in pil. xx. Sig.—Three to be taken daily.

February 19. Having, in spite of all care, been intercepted whilst in *coitu*, a new and alarming series of paroxysms ensued. The cold hip-bath was again used, with the happy result of immediately checking the convulsion. Finding that the leucorrhœa had returned, another injection of nitrate of silver was administered; and, as there was a considerable quantity of mucus secreted from the vulva, a mild solution of sulphate of zinc was applied, by means of a napkin, to its surface. This arrested the discharge and diminished the irritability of the parts. To gain control over the system, the following formula was substituted for that first exhibited: ℞.—Ext. conii ℈j; ext. dulcamaræ ℈ij; ex. nucis vomicæ gr. v.—M. et divid. in pil. xx. Sig.—Four to be taken daily. The hygienic directions were renewed, and the frequent use of cold water, in the form of injections, local application to the genitals, and occasional hip-baths, was continued.

March 22. Another attack supervening, I allowed the convulsions to have full sway, with the impression that fear, agony, and exposure would prove material aids in the course of treatment. Nor was there error in this opinion, for a full confession was voluntarily made, with, I trusted, earnestly sincere promises of amendment. The course of treatment was begun anew by the administration of a hydragogue cathartic, together with the application of leeches to the perineum. The allotted diet and general regulations as to habits were persevered in, whilst the internal remedies were changed by giving a grain of the extract of dulcamara daily, and injecting two fluidounces of the decoction of bittersweet into the vagina daily, and allowing it to remain as long as possible.

April 13. The convulsions were renewed after an unsuccessful *coitus*, but her sufferings were less intense than ever before. Again was she forced to submit, unaided and uncomforted, to the agony of her attack. Previous to this time, her general health had been excellent; but she was now so debilitated that I was obliged to exhibit full doses of tinct. cinchonæ comp., and allow her the use of meats at dinner. This was continued for two weeks, when, her system having recovered its ordinary tone, the vegetable diet was renewed. Meanwhile, the following was administered: ℞.—Ext. dulcamaræ ℈iij; alcoholis fℨss; ft. sol. saturand. et adde tinct. aconit. rad. ♏x; tinct. digital. fℨj.—M. ft. in sol. Sig.—Take fifteen drops three times a day. The arterial sedatives were indicated by the irritability of the heart, which, within

the last week, had become distressing. This formula was used for about eight days, after which three grains of the extract of dulcamara were given daily from the 26th of April to the 30th of May, when she declared that not only was the sexual desire subverted, but that, on being tempted to have intercourse a few nights previous, she had found herself emasculate. Since that time, I saw her weekly till near the end of July, and was more than once denounced for having destroyed her virility. I controlled her with threats of exposure on the one part, if she destroyed my work, and, on the other, promised to render her sexually fit to assume the duties of a wife whenever such services were needed. In concluding, it must be stated that though the treatment is here represented as being nearly continuous, yet it must not be so considered, for at times arterial excitement, cereberal stimulation, or their reverse, were induced when the constitutional remedies were suspended for a few days, and appropriate means taken to check the morbid condition excited by their use. When resumed, it was with caution.

This day, September 13, I saw the girl, who says that though she now occasionally experiences a slight venereal orgasm, yet she has no inclination to resume her old habits, and renew the disease which cost her such an effort to be rid of.

ART. VII.—*Remarkable Gunshot Wound.* By WM. F. EDGAR, M. D., Ass. Surg. U. S. A.

THE following case appearing to possess some points of unusual interest, it has been deemed worthy of a report in detail.

Private B., of Company "L," 1st Artillery, being on duty with a mounted detachment operating in the Big Cypress whilst at Fort Simon Drum on the morning of the 3d of May, accidentally shot himself in the left arm with a large-sized Colt's revolver. The ball entered the middle of the internal side of the arm, at about three inches above the internal condyle of the humerus, and passing over the anterior aspect of the bone, made its exit at a point nearly opposite. Asst. Surgeon R. F. Simpson, who was on duty at the post at the time, says: "I saw the wound immediately, and found florid blood spirting from it in jets; supposing the brachial artery to have been wounded, I placed my fingers over it for a few minutes, when the hemorrhage ceased. I then dressed the wound with a compress and bandage, and directed the application of cold water, at the same time I noticed the absence of the pulse at the wrist of the wounded arm." The patient had been considered the subject of mental aberration since he has been known in the service, and appeared to suffer exacerbations, as it were, at times. He tore the dressing from off his wound twice during the day, but did not induce a return of the hemorrhage; after the third dressing it was not disturbed again, but on the evening

of the 6th he made his escape from the fort, and walked fifteen miles during the night, through the Indian country to the camp of his company, but still no hemorrhage, and the wound did well. On the 20th of May, he returned to this post with his company, and I took him in hospital. The wound in the arm had nearly cicatrized; he only complained of some stiffness from contraction at the bend of the elbow; at the end of a week or so, the wound having entirely cicatrized, I sent him to his quarters. On the evening of June 12th, it appears private B. bought a pistol at the sutler's, a five inch Colt's revolver, and on the morning of the 13th (Friday), immediately after breakfast, and in the company's quarters, having perhaps an exacerbation of his hallucinations, drew his pistol, which he had previously loaded, and fired promiscuously at two of the men in the quarters without effect; he then drew on the Orderly Sergt., who, speaking to him coolly, asked him what he wanted to shoot him for; he replied, "Then I'll shoot myself," and suiting the action to the word, did so by putting the muzzle of the pistol against his left side. The wound not proving immediately fatal, he was taken to the hospital, where he ejected a large quantity of ingesta from the stomach, accompanied by a few ounces of blood. He manifested a great deal of strength and mental excitement, and his pulse (only to be found at the right wrist) was a little depressed; he was put to bed, and cold cloths applied to the chest and abdomen, and a little solution of sulph. morph. administered, under which he became quiet, and remained so during the day, occasionally taking a little cold water or cold tea; his pulse rose to nearly the natural standard, and with a little more sol. morph. he slept and passed a quiet night. In the morning (Saturday) found him doing well, complained of some soreness in the region of the wound, voided urine once or twice during the day, had small motion of the bowels in the evening, asked for and took a little weak broth, took a ¼ gr. sulph. morph. at bedtime, and continued quiet and comfortable till 3 o'clock on Sunday morning, when he began to complain of pain in the abdomen. Fomentations were applied; at 6 o'clock had some tympanitis and hiccough, small thready pulse, countenance sunken and anxious; a few drops of sol. morph. allayed the hiccough; complained of sensation of hunger, and continued to sink until 12 o'clock, when he suddenly expired. Being anxious to see the result of his injuries, especially the original one of the arm, I and Asst. Surgeon John Moore, on Monday morning proceeded to make an examination post-mortem.

The brachial artery being cut down upon and dissected out from the axilla to its bifurcation at the elbow, was found incorporated with, and firmly bound down to the bone by the injured and contracted mass of muscular tissue in the original track of the ball, two-thirds of its circumference having been carried away by the ball for three-fourths of an inch of its length; then, for the distance of half an inch above and below this contraction, it was slightly enlarged rather than contracted, solid and cord-like. On opening the chest and abdomen, there were little or no signs of inflammation; there was con-

siderable effusion of blood in both, and we found that the ball had entered the body between the cartilages of the last true and first false ribs, about two and a half inches from the point of the ensiform cartilage, had passed through the stomach at its junction with the œsophagus, through the diaphragm, inferior anterior edge of the left lung, apex of the heart, cutting within a line of the interior of the right ventricle, and into the right lung.

That an artery, of the size and situation of the brachial, should, after the receipt of such an injury, be attended by so favourable a result, without ligation or more compression than was made, will not, I believe, be considered a common occurrence; and that an individual after such lesions, especially of the stomach and heart, should live for forty-eight hours without manifesting more untoward symptoms than appeared in the fatal injury in this case, appears also to be a point worthy of remark.

To General Thomas Lawson,
Surgeon General U. S. A.

Art. VIII.—*The Ecraseur Linéaire of M. Chassaignac.* By A. George, M. D., of Baltimore. (With three wood-cuts.)

At a meeting of the Chirurgical Society of Paris, held in 1850, a memoir was presented by M. Chassaignac, relative to an instrument of his invention, then in course of improvement, and called by him the metallic articulated ligature. He had in his practice met with those difficulties which all surgeons have experienced in the use of the ligature as applied for the removal of portions of tissue, tumours, etc., in the great length of time their action requires, and the limited strength even the best of them possess. Yet being aware that under certain circumstances the knife cannot safely be applied, he had endeavoured to unite in this instrument the security of the ligature with the rapidity of the bistoury, and if we may judge from the opinion of the society, expressed after witnessing his experiments, he had succeeded. Since that period the instrument has undergone considerable modifications, and in the hands of Mathieu, has been made more powerful, graceful, and altogether better adapted to its purpose.

To facilitate the description, I have added two diagrams. In Fig. 1 is seen, "B," the barrel or sheath of a flattened form, and in length from six inches to ten or more, with a bore of about ½ by ¼ inch or larger, in proportion as the sheath is longer. It is open or free at both ends, but at one extremity is arranged the wooden handle "A." Within the barrel, and running its whole length as well as that of the wooden handle, are two strong rods, which slide in each other by means of grooves, as shown in Fig. 2. At

one end these rods fasten by small pivots to the chain "C," at the other is opened the steel handle or lever "F," which being alternately raised and depressed in a see-saw manner, communicates an advancing movement to each rod in turn, the extent of this advance being governed by the catches "D" on each side the barrel which play into the teeth of the rods. In this way a sawing or rubbing movement is given to the chain, whose advance is further influenced by the greater or less *width* of the teeth just mentioned.

Fig. 1.

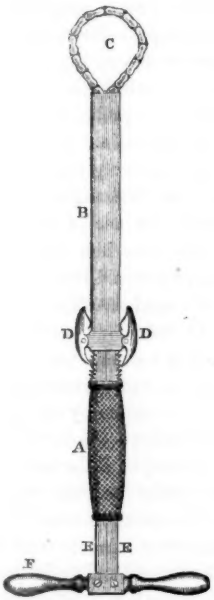
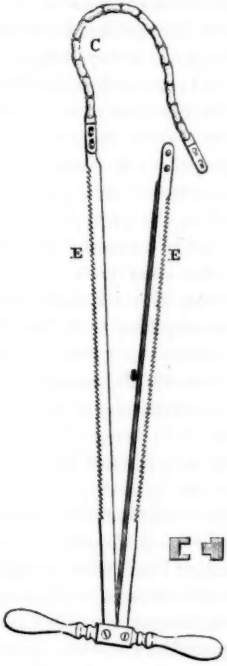


Fig. 2.



The chain is made precisely as is the ordinary chain saw, with the exception of the teeth, and is stronger and heavier, with each edge equally obtuse, except for certain purposes when the inner or cutting edge is somewhat bevelled. The interior arrangement and the joining of the several parts, will be understood by a glance at Fig. 2. Fig. 1 represents the instrument ready for use. It is obvious that its mechanical arrangement is one affording the operator great power, as great perhaps as may be attained by any instrument of manageable dimensions.

The mode of action of the common ligature is too well known to need more

than a reference here, and every favourable condition fulfilled by it is carried out by the chain, with this addition, that the supremacy of the latter begins to manifest itself when the ligature becomes powerless. The strongest ligatures we possess simply condense; the chain rapidly reaches the maximum of condensation, and division follows.

It might, perhaps, not be uninteresting to speak more in detail of the physiological action of the Ecraseur, and describe some experiments illustrative of its power, but I can here do no more than indicate its prominent features and advantages, and I shall be satisfied if I but draw the attention of the profession to the examination of an instrument I have seen so successfully used by its distinguished inventor and other eminent French surgeons.

1. The Ecraseur is applied, as a general rule, by first pediculizing the tumour or tissue to be operated on, and then embracing the pedicle with the noose of the chain. Where no tumour is concerned the manipulation is different, as in fistula, where the chain is conducted through the channel by a probe, or in case of the tongue, where the organ is directly embraced by the chain. The ingenuity of the surgeon will readily discern the best mode of applying the chain when instructed in the principles of the instrument. M. Chassaignac, with the natural zeal of successful invention, would extend the use of the ecraseur beyond what seem to me its limits; thus, I have seen him amputate the female breast with his chain, but the same operation would have been more rapidly accomplished with the bistoury, and with equal security, for we can readily control the vessels in such parts, but in case of amputation of the tongue, hemorrhoids, erectile tumours, or whenever vascular parts are concerned, the advantages of the ecraseur are too obvious to need argument.

2. The chain being adjusted, the lever is put in motion by the operator, being regularly elevated and depressed in see-saw fashion—the degree of condensation thus gradually becomes greater and greater, until its maximum is attained and the separation accomplished. But to obtain the hemostatic effect, the great end and advantage of the instrument, the operation must be slowly performed, at least fifteen seconds (and sometimes one minute) must elapse between each advance of the chain. An aid is near at hand to indicate the periods to the operator, or he himself has a watch before him. This procedure is indispensable, and when carefully observed I have never seen any other than a favourable result. The duration of an operation, therefore, depends upon the mass and density of the tissue, but from five to ten minutes will ordinarily suffice for most cases; the amputation of the tongue in totality demands, however, twenty minutes to half an hour. If two instruments be used simultaneously, of course the time will be diminished by one-half. If too rapid a movement be given the handle, we approach the conditions of excision by a too prompt division of the pedicle, with this exception, that solutions of continuity effected by the ecraseur are much less liable to hemorrhage than those produced by the knife. But by a gradual action the coagula have time to form, the tissues are gently separated, and the operation

concluded without loss of blood. This closing of the vessels is, moreover, permanent. The after-treatment must of course be conducted upon general principles; most commonly M. C. uses for local application a little starch-flour thrown upon the wound if small, and glycerine, where the surface exposed is larger.

3. As the chain carries the compression of a tissue to its maximum before performing its division, the wound must necessarily be reduced to its smallest limit, and is far less than that caused by any other process.

4. The pain which we might suppose, *à priori*, would be intense, is probably no greater than under the knife after a certain degree of compression is reached, and the action is so gradual, the advance of the chain so almost imperceptible, that all *shock* is spared the patient. Indeed, since the introduction of chloroform, pain has become a matter of little moment.

5. When a mass is of great size, it is better to attack it with two instruments; dividing it. Care should be taken to avoid getting pieces of bone within the chain, and as far as possible to avoid the skin, which on some parts of the body opposes an extraordinary resistance, and indeed in some cases it is necessary to incise it before applying the chain. This is, however, a matter of simple detention, as it is not from the skin that we dread hemorrhage.

6. Sections performed by this instrument are not followed by putridity, and the tendency to inflammation is far less than after the use of the common ligature, caustics, and indeed, in many instances, of the bistoury. M. C. reports but one case of purulent infection, and none of tetanus. Suppuration is generally considerably diminished by this method, and cicatrization rapid; many patients operated for large hemorrhoids have left the hospital on the third day.

7. It is well known that the great success of the method of lithotrity is due to its moral effect; in like manner many who would shrink from the surgeon's knife will willingly submit to a bloodless operation, and this is an advantage which experience will not deride.

8. The new method has been applied to the treatment of hemorrhoids, fistula in ano, amputation of the tongue (without section of the maxilla) at its base, phymosis, falling of rectum, polypi of rectum, uterus and naso-pharyngean, amputation of neck of uterus, varicocele, erectile tumours, extirpation of tonsils and testicle, and various tumours. The head and trunk of the fœtus have also been separated in utero.

It is impossible to predict to what extent the application of the principle of the ecraseur may be carried; whether it will ever take its place among the apparatus for the greater operations may be doubted, but every probability exists that it will supersede the common methods of treating most of the diseases mentioned. Already it has attained great popularity in France, and I am convinced that the profession in our country will be forced to admit its claims, when they have examined the question.

It is not a mere novelty, a surgical toy, but an established fact, approved by

scientific men of the first order, and basing its pretensions upon numerous trials from which it has issued triumphant.

BALTIMORE, *October* 3d.

[NOTE BY THE EDITOR.—The *écraseur* of M. Chassaignac has excited much interest among the Parisian surgeons, some of whom pronounce it to be the greatest improvement in surgery since the discovery of anæsthesia. It has also been recently used by several of the most prominent London surgeons, who seem to regard it with great favour.

The original instrument of M. Chassaignac, manufactured by Mathieu, has been improved by Luer, and also by Charrière. The essential part of the instrument is a chain so arranged that it can be forcibly tightened around the part designed to be removed. In Mathieu's and Luer's instruments, this tightening is effected by means of a rack and pinion; in Charrière's by means of a screw. The objection to the two former instruments is that the chain passes through a tube which it is difficult to clean and keep dry, and it is not passed through very easily or fastened readily. They are also more complicated and more expensive than that of Charrière. This last instrument is represented in Fig. 3.

Fig. 3.

M. Charrière has also made other improvements in the instrument. He has combined the advantages of a straight and curved instrument by making several extremities screw on one handle. He has also so contrived it that chains of various sizes can be fitted to the same instrument. The chain attached to the curved extremity has also been made with a degree of curve in its links, so that, besides being more easily applied to a tumour in a deep passage, as the vagina or rectum, it adapts itself to the channel of the instrument much more easily than the straight chain can, and is less apt to be broken when drawn home. Finally, the mode of attaching the extremities of the chain is more simple, and as traction can, if necessary, be made on both ends at once, the power is much increased.

"The action of the *écraseur*," remarks Mr. T. SPENCER WELLS (*Med. Times and Gaz.*, Oct. 11, 1856), "though slower than that of the knife, is much more rapid than that of the ligature, and its action is direct; not indirect like the ligature, which only divides tissues by the process of gangrene it induces. The *écraseur* first condenses the tissues it acts on, and then divides them with extreme regularity. The wound does not appear at all bruised or torn. When it acts on an artery, it first divides the two internal coats, which are folded up in such a manner as to plug the vessel. The closure is assisted by the agglutination of the outer coats, before they are divided, and after separation has been effected, the closure is so perfect that the channel cannot be opened by blowing

forcibly through it. Experiments have been made at the Veterinary School near Paris, and the carotids of sheep have been divided without loss of blood. There is nothing surprising in this, when we remember how seldom severe gunshot, lacerated, or contused wounds bleed, that a limb may be torn off by machinery, and no blood be lost; and that *bites* are very rarely attended by hemorrhage. The lower animals have no occasion to apply a ligature upon the umbilical cord of their young; they simply bite it through, and the action of the *écraseur* is much more like that of biting than of crushing."

Dr. Geo. H. Macleod, formerly surgeon to the Civil Hospital at Smyrna, and to the General Hospital in camp before Sebastopol, in a recent paper (*Medical Times and Gaz.*, Nov. 29, 1856), has given so interesting an account of M. Chassaignac's mode of procedure in the principal operations in which he employs the *écraseur*, with the results he has himself observed in a tolerably extended experience in its use, that we are induced to quote what he says on the subject:—

"It may be said generally that the chief aim of the écraseur is to supplant the ligature; and that it fulfils all the objects aimed at by the ligature in a more rapid and satisfactory manner constitutes its claims to the attention of the profession. Its latitude of action, too, it will be seen, is much greater than that of any ligature we possess. A comparison of it with the ligature may be stated thus: In obviating hemorrhage it at least stands on an equality with the ligature, as it is found so 'hermetically and solidly' to close the vessels before dividing them, by an action on their coats similar to that of the ligature, that, though I have repeatedly seen the most vascular growths removed by it, I have never, except in one solitary case, seen a drop of hemorrhage. As to the speed of action, it is greatly preferable to the ligature, which has to ulcerate its way through a tumour by a process slow and tedious enough, its very slowness being essential to its success. Further, the ligature requires, in general, tightening, causes great pain and irritation, and leaves a large suppurating surface. The écraseur, on the contrary, so compresses the parts, that the resulting raw surface is of very limited dimensions. It enables us to administer chloroform during the whole proceeding, and thus to obviate pain; and, finally, it puts in our power an amount of force unknown in any ligature we possess. In the case of nervous persons or young children, the speed with which it acts, in comparison with the ligature, holds out many advantages. In a word, it in a great measure combines the benefits of the knife and the ligature. In its results, too, the écraseur contrasts advantageously with the ligature. Without claiming for it the advantages of causing greatly less subsequent inflammation and suppuration, of never being followed by erysipelas, or hospital gangrene, or tetanus, or purulent absorption, as is so energetically declared by Chassaignac, still I must honestly confess that the disturbance caused by it has been in general very slight, and the disagreeable results few, in the cases I have had an opportunity of observing. The mode in which the vessels are closed may well be considered to form a barrier to purulent absorption.

"The essential step necessary in using the écraseur is, obviously, to form a peduncle, if the part to be removed do not already present one. This is accomplished in various ways, according to the nature of the part. If, as in tumours on the surface, the part to be removed is flat, the best mode of procedure is to raise it up, if possible, from the subjacent tissues, and so to draw it out that several long curved needles can be passed in different directions across and under its base. A ligature is then tied behind these, and a neck thus formed for the chain. This method is preferable to transfixing the base of the tumour with a double thread, and pedunculating each lateral half. The great point is to get well below the base of the tumour.

"Again, if the mass be very large, or if it be so bound to the underlying tissues as that it cannot be raised up, or if it extend into a canal, as into the rectum, then the chain is first carried under the part in one of its diameters, and made to split it in two to its utmost depth, when each lateral part is treated as separate tumours, needles passed under it, a peduncle formed by means of a ligature, and a chain made to surround each. In a word, a peduncle is to be formed in the sound parts, beyond the disease on which the chain of the instrument can be made to operate. The ligature employed should be a hard compact one, as it is least apt to get entangled in the chain, and as few turns as possible of it should be used. When the chain is firmly in place, it may be as well to cut away the thread, to obviate all fear of inconvenience.

"As the skin presents by far the greatest resistance—a resistance which, at times, is too much for the chain to overcome, its division by the knife, on the line occupied by the chain, will often be advantageous. As this incision will be but superficial, no fear of hemorrhage need be entertained. The skin may at other times be reflected from the sides of the tumour, which will serve the double end of saving integument, when such is desirable, and enabling the chain to get better below the base. Oiling the chain previous to use makes a considerable difference in its facility of action.

"One word as to the mode of passing the chain through and beneath a part. A long and very curved trocar and canula, of a calibre greater than the chain, is made to pass below the part to be split. The trocar being withdrawn, a small elastic bougie, having the chain attached to it, is made to traverse the canula, which is then removed. In this way the chain is conveyed across and under the part. If the base of the tumour be so narrow and deep that a trocar could not traverse it without including much of the sound tissues on either side, then one trocar and canula of large dimensions is introduced from one side, and a lesser from the other, in such a way that the point of the smaller may become inclosed in the larger, and thus a canal of any acuteness may be formed for the passage of the chain.

"In the use of the écraseur, it is essential to proceed with slowness and great gentleness. The holding of the instrument firmly, so that it will not shake much during use is a matter of much moment to the avoidance of hemorrhage. Though in many operations it will be sufficient to allow half or even a quarter of a minute to elapse between each movement, yet to avoid all fear of hemorrhage in the case of very vascular growths, it is well to give a minute to each link. This apparent slowness, and the absence of that 'dash' so much coveted in the surgery of this country, and which this slowness prevents, is one reason why I believe the écraseur will not make so much way as it otherwise might in England.

"Let me glance at the mode of using the écraseur in particular operations.

"The great vascularity of the tongue, and the difficulty of suppressing bleeding from it when it is extirpated, presented an obvious case for the écraseur, and certainly in such instances it possesses several advantages over the ligature, which is the only mode of operation which, in such cases, can be said to compete with it. While the ligature takes days, the écraseur accomplishes the end in a few minutes. It needs no reapplication; it does not cause the presence in the mouth of a putrid mass for days, which, notwithstanding every precaution, will continually mix its products of decomposition with the food. It enables us to give chloroform, and thus obviate that intolerable pain which accompanies the ligature, and which is so severe as to have caused some to premise the section of the nerve.

"If the whole organ is to be excised, two instruments are required. The chain of one is introduced into the mouth by means of a needle passed through an incision below the chin in the same way as Cloquet applies ligatures for accomplishing the same end. The root of the tongue is thus encircled, and cut from above downwards. The second chain introduced by the mouth is laid in the incision made by the first across the base, and is made to divide all the attachments of the organ from behind forward. Half an hour is sufficient to accomplish this operation. Half of the tongue may be removed by passing two chains through the tongue at the angle of union of the diseased with the healthy

parts, and making one chain sever the parts from behind forwards, while the second cuts its way out at right angles to the first. A smaller part may be pedunculated by passing a couple of needles through the tissues behind it, tying a ligature round so as to form a neck, and applying the chain. A small chain and the curved instrument answer best for these operations. The case referred to by Mr. Wells as having been followed by hemorrhage, I saw, with him, and am convinced the result arose from the cause given, viz., the sudden jerk of the patient's head. If chloroform had been used this could not have occurred. I have reason to think that the attendant exaggerated the frequency of subsequent bleeding in these cases. The result in the case above referred to was ultimately most satisfactory.

"Castration can be accomplished by the écraseur in two ways. The diseased gland may be drawn out from its fellow; a ligature applied above it, so as to constrict the tissues, and by means of the chain the whole removed *en masse*. Or, if the part is voluminous, two chains are passed through a canula behind the cord and vessels at the point of section, and while one is made to divide the cord, vessels, and skin transversely, the other performs the perpendicular section by which the testicle is divided from its fellow. The loss of integument is apparently an objection to this procedure, but the results on this head were ultimately very satisfactory in the cases I have had the means of observing. There was not a drop of hemorrhage, and I did not learn that any of the subsequent nervous symptoms which follow the use of the knife showed themselves, notwithstanding that we might naturally suppose them more apt to follow. In this operation we must, on the whole, prefer the knife, from its greater rapidity, and the fact that, if properly used, none of those results against which the écraseur is supposed to provide, need be feared. If the écraseur be employed, a very long chain, and one of some strength is required to perform the vertical section, and if desired, the skin may be reflected to any desired extent before its application.

"I have seen circumcision performed on several occasions by means of the écraseur, but cannot see the object of its employment in such cases, as the knife accomplishes the object much better and more expeditiously. The hemorrhage, in no case of this sort, is an object worth taking so much pains to avoid. It is easily performed by separating the prepuce from the gland, either by drawing it forwards, and transfixing it with a double thread, whereby to form a peduncle, or, if practicable, introducing within the orifice a pair of forceps, between whose points and the glans the thread, and, finally, the chain, is placed. Adhesions between the prepuce and glans will prevent the use of the écraseur, and the laxness of the tissues make them very apt to get drawn into the canal of the instrument when the chain works home.

"Amputation of the penis is readily accomplished by means of the 'metallic ligature.' An elastic catheter being introduced into the canal, a needle is made to transfix both, a thread is tied behind the needle, and the chain made to divide the whole. The presence of the catheter prevents that obliteration of the canal which might result from the strong constriction exercised by the chain, while the integuments and mucous membrane lining the passage are so approximated by the action of the instrument, that hardly any wound results. Thus, then, there is no hemorrhage; the vessels are so closed that purulent absorption is obviated, and the wound may be said to be healed by the action which caused it. The difficulty of seizing a vessel in the stump of an amputated penis is well known to be, at times, very considerable, and this difficulty does not exist in the operation by the écraseur.

"The radical cure of varicocele is performed by Chassaignac as follows: The cord and veins being carefully separated, and the former drawn towards the middle line, three needles are made to transfix the parts between the cord and vessels, each needle being at a little distance from the other, and in a line with the axis of the vessels. Care must be taken that the needle lowest down does not transfix the tunica vaginalis. A ligature is placed firmly round the needle nearest the ring, so as to arrest the blood in the veins, and another ligature is twisted round behind the needles, so as to include them all, and form a peduncle. Thus far the patient should be kept in the erect posture, so as to render

the vessels full; he is now made to lie down, and chloroform being administered, the chain is applied behind the needles, and made to remove the knuckle included in the ligature. About half an inch of the veins is thus removed, and the resulting wound is brought together by suture. This operation takes from fifteen to twenty minutes. The rapidity and certainty of the result are the only advantages which this operation may be said to possess over the ordinary ones, while the extent of the wound is a disadvantage. I have not seen either hemorrhage, or erysipelas, or swelled testicle, nor yet troublesome erections, follow this operation when performed by the écraseur.

"The removal of piles is performed with wonderful facility by the écraseur. The tumour is seized by a vulsellum, and drawn out, when, if small, a ligature is simply thrown round its base, and the chain applied; or, if larger, a double thread is carried through its base, and tied so as to constrict it in two halves; or a needle may be left transfixing the base, and a ligature applied behind it. In many cases the points of the fingers will be sufficient to constrict the neck. Half a minute at least should be allowed between each movement, and ten or twelve consumed in the removal. When the anus is entirely surrounded by vascular piles, Chassaignac removes the whole at one grasp, by introducing a pair of his diverging forceps within the orifice, drawing it well out, and applying a ligature, so as to pedunculate the part, and then using the chain. A bougie must in this case be introduced within twenty-four hours, and that with great gentleness, to prevent tearing, so as to insure the patency of the gut, which is apt to be obliterated by the strong compression of the chain. The bowels should be kept quiet by opium for twenty-four hours. I have never seen any hemorrhage occur in the pretty numerous cases in which I have seen the écraseur employed; and I have seen a woman advanced in pregnancy thus with perfect safety relieved from large hemorrhoidal growths. The slowness and extreme pain and irritation, which are inseparable from the use of both the ligature and caustic, contrast disadvantageously with the operation with the écraseur, and the subsequent irritation of the bladder also appears much less when the chain is used. The very unfavourable state of the patient, the rapidity of the operation, and the bowels not being kept quiet afterwards, appear to me the causes of the fatal result reported in Liverpool. The bowels, in general, act with very little irritation, in thirty-six hours. In over a hundred cases, many of them of great severity, operated on in Paris, only one fatal result has followed, and in that instance from the breaking of the chain, the essential feature in the operation, as preventing purulent absorption—the cause of death—was wanting, viz., the closure of the vessels before their division. By means of the écraseur strangulated piles can be at once removed, and Chassaignac does not find a state of inflammation any counter-indication. Several patients operated on at the Lariboisière have returned to their work in three days; and in one case in which I saw an enormous hemorrhoidal tumour removed, no trace even of its site could be discovered a week after.

"I have never seen the écraseur used in prolapsus of the rectum.

"I have seen the lower part of the rectum removed for malignant disease twice, and in neither case was there any hemorrhage. It was thus performed: A long and much-curved trocar and canula was made to pass from the perineum, at a point anterior to the anus and external to the disease, up beyond the parts implicated in the gut, and outwards towards the coccyx posterior to the diseased tissues. The trocar being then withdrawn, the chain was passed along the canula and made to split the diseased mass in two after the tube was withdrawn. Long needles were then made to transfix the base of each lateral half, a ligature tied beyond them, and by means of two écraseurs worked simultaneously, both halves were removed at once. When we weigh the difficulties attending all operations of this kind, the great vascularity of the morbid parts, and the difficulty of commanding hemorrhage when it does occur, we must think favourably of the écraseur in such operations if they are to be performed at all. In three cases of extensive disease in which I have known the écraseur employed, one died of peritonitis, one has been well for eighteen months, and the third has also completely recovered.

"For the removal of polypi of the uterus or rectum the écraseur answers well.

The curved instrument and chain suits best. A very small chain, perhaps a wire, employed in the same way, will be found most convenient. The chain may either be introduced projecting in the form of a loop from the end of the instrument, or carried round the tumour before being attached. The inflammation and pain which follow the use of the ligature in these cases, and the presence for days of a strangulated and dead mass in the cavity are all avoided by the écraseur, while the hemorrhage, so troublesome, and even, at times, fatal, which may result from excision, is obviated. The method mentioned by Mr. Wells, at the Medico-Chirurgical Society, of tying the base of the polypus before excision, is, perhaps, better than even the écraseur. The weak state to which many patients are reduced before operation makes the avoidance of hemorrhage very desirable.

"I have not seen the os uteri excised by the écraseur, but having lately seen the operation done by scissors, I can appreciate its performance without hemorrhage. There was one patient at the Lariboisière who had been successfully operated on by the chain two and a half years before.

"Vesicular, erectile, and fungous tumours on the surface, on the labia and neighbourhood of the rectum, nævi, &c., are easily removed by the metallic ligature. The great point to be attended to is to raise them well up from the underlying structures to pass needles clear of them and under their base, to isolate them by a ligature, and to work the chain very slowly. The integument may be reflected from their side, both to save it and allow the chain to get well below them. Their extent, too, is thus better defined. The écraseur is not adapted for the removal of the mammæ. Hemorrhage can be here easily commanded, and when the skin is reflected, the operation is nearly accomplished.

"It seems absurd to lay open fistula in ano by the chain, but in those cases in which the external orifice is at a great distance from the anus, and we wish the track to heal by granulation, I have seen it advantageously employed.

"I have seen the chain used for the destruction of the intestinal valve in false anus, and its speedy result, together with the absence of any gangrenous action, which is so difficult to limit, and which attends Dupuytren's forceps, gives the écraseur certain advantages. An elastic tube is introduced through the parts some days before in such cases, so as to make a passage for the chain.

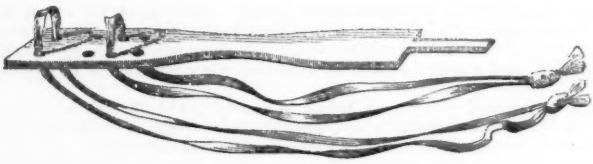
"In concluding these detached remarks, I would add that, whatever opinion may be formed of the écraseur, the absence of hemorrhage, which attends its use, is a fact which cannot be overlooked, and one which we may turn to good account. We may not in every case have the same fear of blood, expressed by M. Chassaignac; yet, it is very true that, independently of the harm its loss may cause in young children and weak persons, the power of avoiding it, and the incidental 'cutting,' which is the chief fear of a nervous patient, will often enable us to persuade persons to submit to necessary operations, who, if otherwise prevailed upon, might be seriously prejudiced by the mental alarm. I am, as much as any one, opposed to all 'unnecessary complications' in surgery, and particularly to any tendency to that mechanical surgery so rampant across the channel; but, though the boast of English surgery is that it accomplishes all operative interference with the forceps and scalpel, yet we may, in striving for simplicity, throw away an obvious advantage. To propose the performance of lithotomy or amputation with the écraseur is simply absurd; but I am convinced that, if restricted to its own sphere, and employed for those purposes to which it may legitimately be applied, the écraseur is a most useful addition to our armamentarium. For many purposes, I know of no means which can be thought to equal it, except the galvanic wire, which I had the pleasure of seeing in the hands of Professor Middledorpf, of Breslau, adapted to the uses of surgery in such a way that, if it can be so brought into general use, it must supersede, in most cases, every other contrivance. That the écraseur will ever supplant the knife in most of the cases for which it has been proposed, I do not believe, but that it may in some I sincerely hope."

ART. IX.—*Apparatus for the Reduction of Dislocations of the Fingers or Thumb.* By RICHARD J. LEVIS, M. D., of Philadelphia. (With two wood-cuts.)

FOR the purpose of obtaining a secure hold of a dislocated finger or thumb, and of giving to the operator a powerful control of its movements during reduction, the writer has devised, and effectively used the contrivance illustrated by the accompanying cuts.

It consists simply of a thin strip of any hard wood, about ten inches in length, and one inch, or rather more in width. One end of the piece is perforated with six or eight holes, arranged as seen in the drawing. (Fig. 1.)

Fig. 1.

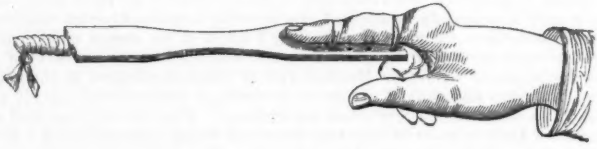


The opposite end is partly cut away, forming a projecting pin, and leaving a shoulder on each side of it. Toward this end of the strip, a sort of handle shape is given to it, so as to insure a secure grasp to the operator.

Two pieces of strong tape, or other material, about one yard in length, are prepared. One of these is passed through the holes at the end of the strip, leaving a loop on one side. The other tape is passed through another pair of holes, according as it may be a thumb or finger, to which it is to be applied, or varied to suit the length of the finger, leaving a similar loop. If a dislocated thumb is to be acted on, the second tape should be passed through the holes nearest the first. The ends of each separate tape are then tied together.

To apply the apparatus, the finger is passed through the loops. (Fig. 2.)

Fig. 2.



The loop nearest the first joint is then tightened by drawing on the tape, which is then brought along the strip to the opposite end, across one of the

shoulders, and secured by winding it firmly around the projecting pin. The other tape is tightened in a like manner, crossing the other shoulder, and winding around the pin in an opposite direction, when, for security, the ends of the tapes are finally tied together.

By this arrangement is gained a very simple means of making powerful extension; a leverage power by which the dislocated phalanx may be made to follow the rounded surface of the opposite articulation; and a power of rotating it while extension is being made, so as to turn one of the small condyles of the luxated phalanx at a time, under the unyielding lateral ligaments of the joint.

If properly applied, without the slightest painful constriction of the finger or thumb, this apparatus is perfectly unyielding to any force applied in reduction, and it must break rather than slip from its hold.

The control thus given to the operator, with its ready preparation at an emergency from materials everywhere at hand, give the apparatus decided advantages over the simple traction of the "clove hitch," or the more expensive and complicated devices which have been used for the purpose.

ART. X.—*Case of Poisoning by Strychnia.* By H. L. GIVENS, M. D., of La Grange, Kentucky.

I WAS requested, on the evening of the 17th of September last, to see a young man on whom sentence of Court had just been pronounced for a misdemeanor. Being a man of cultivated intellect and very sensitive, and feeling deeply the stigma or disgrace the sentence entailed, he determined on self-destruction, and had just taken two ounces of tinct. opii. I found him labouring under considerable excitement and perturbation of mind, with a full, frequent pulse, and vomiting freely. As no coma or lethargy had supervened, I soon discovered that the frequent efforts at emesis, which I encouraged, would relieve him. I remained but a short time, and left him doing well.

In about an hour after, I was informed that he was suffering with violent convulsions or spasms. I immediately visited him, and found the muscles of the throat, neck, chest, and arms, in violent spasmodic action; while the inferior extremities remained in a passive, straight, and rather rigid condition. Knowing that the spasms did not result from the effects of the opium, I suspected from his symptoms that he had taken strychnia. In response to my inquiries whether he had or not, he gave an evasive answer, saying that he wished to die, and that nothing would save him now. But on pressing my inquiries, assuring him that I desired to make an effort to mitigate the violence of the pain and spasm, as there was little or no prospect of arresting the dis-

case, he assented, stating that, immediately after ascertaining that the laudanum had failed to produce the effect he desired, he had swallowed two large pills of strychnia, which he had procured for the emergency. The case being urgent, and having some tartaric acid with me, I immediately gave two large draughts of it, in the interval of the spasm, with the view of neutralizing the strychnia, which was followed, so soon as they could be procured from the druggist, by tablespoonfuls, about every half hour, of aqua camphora, alternated with the preparation and doses, as per recipe of Orfila, of ether, ol. tereb., with sacch. alb., and aqua pura, taken at irregular intervals, as deglutition was attended with great difficulty, and the spasms violent for four or five hours, and of a tetanic character.

The intervals gradually grew longer, and, in seven or eight hours, entirely subsided, leaving him quite prostrated, with considerable distension and tenderness of the epigastrium, stricture and soreness of throat, and general muscular system. An aperient being clearly indicated, I ordered two ounces of castor oil, to which was added thirty drops of spirits of turpentine, which operated well.

The indications of gastro-enteritis gradually subsided. But the inflamed and abraded membrane of the throat was attended with hæmoptysis for three or four days, which gradually subsided under the use of frequent mucilaginous draughts of slippery elm, and, in less than a week, he had entirely convalesced, save a little soreness of throat and the general muscular system.

It will be proper to add here, that from subsequent inquiry, I learn from the patient that there was not less than ten or twelve grains of strychnia in the two pills he took; but the stomach being irritable, and vomiting occurring shortly after they were swallowed, the greater portion may have been ejected, though sufficient was retained to produce, for hours, violent convulsions like electric shocks passing through the chest, jerking the whole chest and body up so that the shoulders would strike and rebound; neck drawn, with constantly grappling of the same by his hands, indicating strangulation, or asphyxia; with the hollow of the feet in each of the inferior extremities drawn inward. During the whole of the spasms, the heart beat feebly, though regularly; eyes open with a vacant stare; pupils contracted; palpebra passive, or apparently paralyzed. When roused up from an apparent state of lethargy, the patient was perfectly conscious and sane, answering questions rationally when pressed to do so.

It is not my purpose, were I even prepared, to enter into a physiological dissertation as to the *modus operandi*, or the peculiar effects of strychnia on the human system, as to whether the poison impresses its pernicious effects by a direct action on the spinal cord through the capillaries, as maintained by Stilling and physiologists generally; or, as more recently contended by Professor Harley, of the University College, London, that the poison, to produce convulsions, must be first absorbed and conveyed to the spinal cord through the bloodvessels. Each position may be maintained. The first, in its primary effects, and the second, in its ultimate results; and this, in my

judgment, depends on the quantity taken, and the length of time it remains in contact with the delicate mucous coat of the throat and stomach.

If the quantity is large, its primary impression on the sensitive tissues produces, independent of absorption, violent tetanic convulsions through sympathetic action of the nervous tissues, which is followed speedily by the absorption of the virus of the excited and irritated absorbents of the part in contact with the poison, which, if not neutralized or removed by timely remedies, renders the case still more critical and hopeless, where the poison has passed through the circulating fluids.

How far the poison has been absorbed or taken in the circulating mass, in this case, it is difficult to decide; or, to what extent, if any, the remedies brought to bear in this case, jointly or separately, tended to conduct it to a favourable issue, remains for further inquiry and investigation—such cases being few and far between in this section, it being the first of the kind in which I have been called on to prescribe, in a regular practice of thirty years. Yet its rarity should not plead an apology for passing it by, especially as attention is now directed to the investigation of the nature and peculiar action of this poison on the human system, and to the endeavour to discover some prophylactic by which its otherwise fatal influence may be counteracted.

La Grange, Ky., *Oct.* 15, 1856.

Art. XI.—*Rupture of the Uterus—Gastrotomy successfully performed.* By John H. Bayne, M. D., of Prince Geo. County, Maryland.

On the 25th day of June, 1856, I was requested to visit Christina, a servant woman, 25 years of age, robust constitution, who had been in labour two days with her fourth child. Midwife present during this time. Immediately after my arrival, I proceeded to make examination per vaginam. The os uteri was fully dilated, and the vertex of the head could be distinctly felt presenting very high up. Patient complained of having experienced some hours previously an exeruciating pain in the epigastrium, accompanied with a peculiar tearing sensation. There was then an entire cessation of pain, and of all expulsive uterine efforts. Pulse 130 per minute. Difficulty of respiration, and prostration. She soon became comatose, with great tendency to collapse. The head of the fœtus seemed to be rapidly receding, and in a very short time the entire contents of the uterus escaped into the peritoneal cavity. Child could now be very distinctly felt externally through the parietes of the abdomen, and appeared to be very high up, mechanically pressing against the diaphragm, which rendered the respiration still more laborious. Diagnosis was now easy. On again introducing my hand into the womb, I found an extensive laceration had taken place in the anterior portion of the

fundus. As it seemed impracticable in this case, on account of the complete disappearance of the fœtus, to introduce the hand through the rent and deliver per vaginam, I communicated the nature of the case, and suggested gastrotomy as the dernier resort. The operation was soon determined upon, and as the woman's life was in the most imminent danger, only time was allowed to obtain the assistance of those medical gentlemen who resided very near the residence of the patient. Drs. Heiskell, Wood, and Hill were promptly upon the spot, and with their aid, and without any anæsthetic agent, I proceeded to perform the operation in the following way. After adjusting the bedstead on which she was lying, I made an incision with the convex bistoury, beginning at the umbilicus in the medial line, and terminating near the pubis, dividing the parietes of the abdomen down to the peritoneum. It was then cautiously opened, and the finger used as a director to avoid injury, until the peritoneum was divided. As soon as the abdominal cavity was opened, there was a sudden gush and escape of at least one quart of serosanguineous fluid. There was no hemorrhage. A very large fœtus was now exposed to view, which was removed with as much celerity as possible.

The abdominal cavity was then cleansed. The intestine at this time *in sitû*. Womb at the rupture thin, and the laceration jagged and irregular. The lips of the wound were now approximated and kept in contact by interrupted sutures and adhesive straps, observing to leave the depending part of the wound free to allow the escape of matter.

The incision was next covered with lint spread with simple cerate, over which was placed a large compress, and a body bandage completed the dressing. The operation subsequent to the incision and extraction of the fœtus was completed by Drs. Wood and Heiskell in the neatest and most skilful manner.

The patient was then removed to bed, and a stimulant administered. In a short time the heart reacted, respiration improved, coma subsided, and her condition was rendered so comfortable as to inspire her with strong hopes of recovery. For two days after the operation no untoward symptom occurred. On the third day fever set in with a tumid abdomen and pain on pressure, and considerable peritoneal inflammation. But under the influence of the antiphlogistic regimen, antimonials, calomel and opium, purgatives, enemas, &c., all inflammatory action subsided, and the patient soon seemed to be convalescent. Complete cicatrization took place in twelve days, and the case continued to progress favourably. A dark grumous, purulent, and offensive discharge continued per vaginam for several weeks unaccompanied with irritative fever.

About three months before the patient's last confinement she was attacked with anasarca of the feet and ankles, which gradually extended up the legs and thighs, encroaching upon the abdominal and thoracic parietes; at last involving the upper extremities, apparently invading the whole exterior structure. The œdema excited no great uneasiness, as it was attributed to

the mechanical obstruction produced by the gravid uterus pressing upon the iliac veins, and preventing a free return of blood.

Remarks.—There was in this case some deviation from a normal condition of the pelvis. The antero-posterior diameter was less than the standard, and the capacity of the pelvis was evidently less than ordinary, and from this circumstance, her labours had always been protracted, continuing from two to three days; then there seemed also to be some softening of the substance of the womb which predisposed to this accident.

The selection of gastrotomy was made in this case on account of the rapid contraction of the uterus occurring after the escape of the fœtus, and rendering it impossible to reach the child; deliver through the laceration and per vias naturales. It appears to me the extraction of a full grown fœtus through the rupture would always prove very difficult, and even more dangerous than the operation which was adopted.

Would not a prompt performance of gastrotomy in cases where this formidable accident has occurred diminish the mortality?

P. S. It is now two months since the operation, and the patient is perfectly well and able to resume her duties as cook.

ART. XII.—*Gutta Percha Bougie broken in the Bladder; Lithotomy for its removal; Recovery.* By R. T. MAXWELL, M. D., of San Francisco, California.

MR. W. M., æt. 38, called upon me at 1 A. M., June 20, 1856, stating that he had broken a gutta percha bougie in the bladder; the accident had happened about an hour before, and the pain already produced was excessive. The patient had suffered from a stricture for several years, and, at the suggestion of a surgeon who had formerly treated him, had been in the habit of passing a bougie occasionally, and had always succeeded in doing so without difficulty.

A period somewhat longer than usual having passed without the use of the instrument, he had that day purchased, of an apothecary, a bougie which he recommended highly, made of gutta percha, by a manufacturer: size about No. 9.

The instrument was introduced slowly, and carefully, after retiring to bed, and was allowed to remain undisturbed about half an hour; when upon withdrawing it with gentle traction, it parted, and about three-eighths of its whole length, or $4\frac{7}{10}$ inches, was left in the bladder. Palliatives were used that night, and an examination by the sound made next morning with difficulty, as the irritation of the bladder was already very great, the viscus contracting

spasmodically upon the foreign body contained in it, and the urine passed very frequently in small quantities, mixed with blood, and thick, ropy mucus.

It was impossible to detect the bougie, softened as it was by the warmth of the body, and after several ineffectual attempts, I decided to dilate the urethra as much as possible, to administer diluents, and by means of anodyne enemata, and warm fomentations to quiet the irritation as much as possible, hoping that the point of the bougie might engage in the canal, and by the force of the urine accumulating behind it, might be forced within reach.

Besides having this object in view, the patient's constitution had been much impaired by repeated attacks of intermittent fever, and he was in a very unfit condition for the operation of lithotomy.

The state of the bladder was such, that at no time would it contain more than three ounces of fluid without paroxysms of pain too great to be endured.

The profuse discharges of blood and mucus, gradually diminished under treatment (every care being taken at the same time to improve the general health), although the urine continued to be surcharged with the earthy phosphates.

All efforts to get rid of the bougie otherwise than by the knife, proving hopeless, I determined to resort to it, and on the morning of July 14, I performed the lateral operation for stone, using the staff, and a gorget of small size, only partially dividing the prostate so as merely to allow the introduction of one finger. The foreign body could now readily be felt, and by means of a long and slender polypus forceps, two portions were successively removed, each thickly covered by a crystallized phosphatic deposit.

By adapting the ends to each other, they evidently constituted the whole of the portion of the bougie left in the bladder, and measured, as stated above, four and seven-tenths inches.

The bladder was well washed out with tepid barley water, and upon careful search, it being ascertained that no fragments of the concretion were left behind, the patient was put to bed.

Three weeks after the operation, the urine passed solely by the urethra, and on the thirty-fifth day the wound had healed, and the patient was able to attend to his ordinary business, his progress toward cure having been uninterruptedly good.

The most remarkable facts presented in this case are, that a material of such great tenacity, should so readily have separated in the withdrawal from the urethra, and more particularly that the retained portion should again have been broken by the force of the contractions of the bladder—the broken end of the portion withdrawn having exhibited no indication of a flaw, or other imperfection.

The detail of the case may, it is hoped, serve to warn the profession generally, against the use of so unreliable a material, for the purposes to which it was here applied.

San Francisco, California, *November* 18, 1856.

ART. XIII.—*Veratria and Morphia in Incontinence of Urine.* By THOS. KENNARD, M. D., Assistant Physician to the Blackwell's Island Hospitals, New York.

CASE I.—Moses Kitten, æt. 28, white, engineer, native of New York, was admitted into the Penitentiary Hospital, Blackwell's Island, May 12, 1856, suffering from delirium tremens, with apoplexy, followed by complete paralysis, which kept him in an insensible state for three weeks, during which time he had to be fed with a spoon. On recovering from this, he had no control over his sphincter muscles, discharging both feces and urine involuntarily, for which he was treated during June and July without avail. On the 8th of August he was placed under my charge, when I ordered him to rub the perineum three times daily with the following ointment: ℞.—Morphiæ sulphatis, veratria, āā gr. x; axungiæ, ℥j.—Ft. ung. This treatment was continued three days, when no further inconvenience was experienced, and the control over the sphincters was as perfect as ever before.

CASE II.—John Kipp, æt. 80, native of New York, was admitted to the hospital at the Almshouse, Blackwell's Island, on the 20th of September, 1856, for contusion from a fall. On examining him, and finding his clothes wet, I learned that he had had no control of his sphincter vesicæ for eight years, and was wholly unable to prevent involuntary discharges. Being unable to assign a positive reason for his state, I ordered him to rub the morphia and veratria ointment on the perineum three times daily, and in one week from commencing its use no further trouble was experienced.

CASE III.—John Flynn, æt. 56, native of Ireland, labourer, was admitted to the Almshouse Hospital, September 15, suffering from paraplegia of four years' standing, two years of which time he has had no control over his bladder, but passed his urine involuntarily. I ordered strychnia gr. $\frac{1}{15}$ twice daily for the paralysis, and to rub the perineum three times daily with the morphia and veratria ointment. Two weeks from this time he was cured of the incontinence of urine, and went on rapidly improving till the end of a month, when he was discharged, nearly well.

ART. XIV.—*Case of Poisoning from Wine of Colchicum.* By THOS. KENNARD, M. D., Assistant Physician to the Blackwell's Island Hospitals, New York.

MARY MULLEN, widow, æt. 56, a native of Ireland, came under my care at the Almshouse, Blackwood's Island, New York City, on the 23d of Septem-

ber, 1856, suffering from chronic rheumatism, for which I ordered her vin. sem. colchici ℥j, with directions to take twenty drops three times daily. Twenty-four hours afterwards I was called to see her, and was much surprised to find her in an extreme state of prostration, suffering from excessive nausea and vomiting, with slight purging, heat and burning in the fauces, inordinate thirst, cold, clammy skin, feeble pulse, violent supra-orbital pain, and distressing gastralgia, with very anxious countenance. On inquiry, I found that she had swallowed the ounce of wine of colchicum in twelve hours, and, shortly after, had been seized with violent and profuse vomiting, which had gone on increasing until I saw her. I applied a large sinapism over the epigastrium, and gave subnitrate of bismuth, with opium, till vomiting ceased, and then ordered mucilaginous drinks, combined with a warm cataplasm over the region of the stomach.

September 25. Patient slept but little during the night; has been vomiting at intervals, and still seems in a hopeless condition from the violent gastritis and continued retching. I renewed the use of bismuth and opium, and, after many vain attempts, finally succeeded in checking the vomiting and securing sleep.

26*th*. Patient seems much easier, but still is troubled with much retching and occasional vomiting, with constant thirst, slight cough, and continued pain over the stomach. The same treatment was continued, and she went on improving till September 29, when she was discharged, well.

REVIEWS.

ART. XV.—*A Treatise on Therapeutics, and Pharmacology or Materia Medica.* By GEORGE B. WOOD, M. D. Late President of The American Medical Association, &c. &c. &c. Two vols. pp. 840, 901. Philadelphia, J. B. Lippincott & Co. London, Trübner & Co. 1856.

No department of medicine has advanced more rapidly during the last fifteen or twenty years than Therapeutics. The explanation of this is evident. Physiology, pathology, animal chemistry, and kindred sciences have been rapidly progressing for the same period and longer. They are the natural predecessors of therapeutics. The latter can advance only when the former precede. Progress in therapeutics is the natural result of a more intimate acquaintance with the history and pathology of disease, and the physiology of the human system. Among those who have successfully cultivated this branch of science, Dr. Wood, of Philadelphia, has earned a foremost place. Few men upon this side of the Atlantic have obtained a wider reputation, or more justly earned the reputation they enjoy. It has been said that a man's greatest rival is himself. This remark is especially true of Dr. Wood. As a Lecturer upon Materia Medica and Therapeutics for thirty years, before one of the largest schools in this country, as the author of an elaborate *Treatise on the Theory and Practice of Medicine*, as one of the authors of the *United States Dispensatory* (a work of whose excellence it would be needless to speak), and as one of the attending physicians, for twenty years, of a large Metropolitan Hospital, he has won a reputation of no ordinary character. A man with such opportunities, and such facilities, and such a reputation, finds in himself his strongest competitor. To say that in the work, whose title we have placed above, he has fully equalled his reputation and justified the expectations of the medical community, is ample praise; and we rejoice that we can say this without qualification. We have been looking for the appearance of this work for some time, and now have the satisfaction of chronicling its publication. The reasons which led Dr. Wood to its preparation, are modestly stated by him in the preface, in the following language:—

"In preparing the present work for the press, the author claims to have been actuated, in part at least, by motives higher than those of personal credit, or pecuniary advantage. Though he pretends to no insensibility to these ordinary influences, he believes that he is obeying a call of duty in laying before the profession those results of his research, experience, and reflection upon the subject of therapeutics, which have heretofore been confined to the narrower limits of classes of medical students. His former lectures constitute the chief substance of the present treatise, though considerably extended, and much elaborated. Perhaps he may be laying himself open to a charge of overweening self-estimation, in supposing that he can add to the existing mass of knowledge, or improve existing views in this department of medicine, in a degree which may justify the publication of a book like the present; but he is unwilling to leave the world without giving some degree of permanency to what he has so long taught, and consoles himself with the consideration that, should the work prove of less value to the profession than he ventures to hope or anticipate, it is not likly to do serious injury, and, at the worst, will be merely superfluous."

The work is not, like too many which come from the American press, a compilation, but an original treatise. It is not written for practice, but from practice. Every page bears the impress of the author's research and observation. We do not say that every part of it will meet with unqualified approbation. We do not say that it contains no theories or statements which some will not criticize, but we do say, that whatever statements are made, they are evidently the result of the author's experience and observation. Dr. Wood has not given us the notions of another man, but his own. He has not treated us to a theoretical dissertation upon the uses of medicines, but has given us, in simple and unadorned language, the results of a long professional life devoted to the clinical study of therapeutics. This alone is enough to stamp the book with unusual value. We have books in abundance upon all sorts of medical subjects, therapeutics included, written by those who have nothing else to do than write. Only now and then do we come across a medical work, which is the result of close observation and long experience. In the work before us we find one that bears the stamp of the true coin.

We have said that it is written from personal observation; and so it is. Yet the labours and observations of others are constantly referred to and frequently quoted. No attempt is made by Dr. Wood to conceal the sources of his knowledge. He is always willing to give due credit to others. He is too rich in himself not to acknowledge all his indebtedness. We are, moreover, glad to notice that in his quotations, Dr. Wood has drawn largely from American sources. This is right and just. We have sometimes thought that American professional writers are unwilling to quote their own brethren, and prefer to cross the water and cite English, French or German authorities. Dr. Wood quotes freely from transatlantic authors, but at the same time, he does not hesitate to quote American observers in every part of the country.

A treatise on therapeutics, such as Dr. Wood has given us, supplies a desideratum in our medical literature. It is written from the point of view of therapeutics, and not from that of the materia medica. It differs from the *United States Dispensatory* in not describing drugs with that minuteness, which is essential to the latter work. Yet, while it does not contain minute descriptions of drugs, with detailed accounts of their chemical constituents and pharmaceutical preparations, it presents more fully and thoroughly than the *Dispensatory*, the therapeutical applications and uses of each drug. It differs, moreover, from the author's *Treatise on Theory and Practice* in not containing long and detailed descriptions of diseases; it describes, however, more fully than any work on theory and practice can do, the way in which every drug should be used for the relief of the diseases to which it is applicable. It is, in fact, a complement both of the *Dispensatory* and of the *Treatise on the Practice of Medicine.* A brief and sufficient description is given of the sensible and chemical properties of each article, but the largest space is devoted to an account of its physiological action upon the system, its various therapeutical applications, and of the best mode of its administration.

We should like to give a complete account of the whole work, but a sketch only of what it contains is the utmost we can offer. After doing this we must refer our readers to the work itself.

The *Treatise* is in two volumes, containing 840 and 901 pages respectively. It is divided into two parts. The first part is devoted to general therapeutics and pharmacology; the second to special therapeutics and pharmacology. The first part is in reality an introduction to the second, and occupies only ninety-one pages of the first volume. It contains an exposition of the author's

views of the *modus operandi* of medicines; of the influences which modify their effects, such as age, sex, idiosyncrasy, habit, etc., and of certain theories with regard to modes of therapeutic action. The forms in which medicines are used, and the parts to which they are applied, and the manner of applying them, are also described. This part closes with a classification of medicines, and thus prepares the way for the second and more important portion of the treatise, on special therapeutics and pharmacology.

The classification which Dr. Wood has adopted, is not based upon the botanical or mineralogical relations, or chemical properties of drugs, but upon their relations as therapeutic agents. The physiological and therapeutical action of a drug is made to determine its position as a member of one class or another. Accordingly, remedies are divided into two great classes, called systemic and non-systemic remedies. "The former division embraces the great body of remedies, the latter includes only two small classes." Systemic remedies are subdivided into general remedies, such as stimulants, sedatives, alteratives, etc., and into local remedies, such as emetics, cathartics, diuretics, &c. Astringents, tonics, narcotics, and all drugs, which act upon the circulation and the nervous system, are treated of under the head of general remedies. Those which affect some one part or organ specially, and influence the whole system indirectly (such as emetics and cathartics) are classed under local remedies. Non-systemic remedies are stated to be those which act on bodies foreign to the system, and embrace only two small classes, namely, antacids and anthelmintics. Under the subdivision of local remedies, Dr. Wood has placed several classes, which are not usually found in similar classifications, at least not with the same names. Thus he has made a class of cholagogues, of uterine motor stimulants, and of protectives. When a remedy has several powers, it is treated of most thoroughly in connection with its most distinctive property, and it is again treated of in other classes, to which its therapeutic properties ally it. Hence the same remedies are occasionally considered in different places, and under different heads.

Dr. Wood does not claim for this classification that it is new or that it is free from objections. It cannot be called a scientific one, yet it possesses many practical advantages, which approve themselves to our judgment. We wish, however, that Dr. Wood had not undertaken to compel all remedies into some class or other. We should have been glad to see in the work a class of *unclassified*. We mean that there are some well-known, powerful, and valuable drugs, which, in the present state of our knowledge, cannot properly be ranked under any class. Thus, we do not know enough of the *modus operandi* of mercury or iodine, arsenic or colchicum, turpentine, or nitrate of silver to attach them to any class. We may call them alteratives, or give them some other name, using the expression, like the x of the algebraist, to express an unknown power. But if this is all we mean by such a term, it is better to use a word which implies no theory. It is better to put those remedies, whose action is imperfectly understood, in a class by themselves, without any name. Dr. Wood has placed creasote and copaiva among diuretics, turpentine among stimulants, nitrate of silver among tonics, electricity among diffusible stimulants. We know very well that copaiva and creasote act upon the kidneys, that nitrate of silver will sometimes improve the appetite, turpentine and electricity stimulate the heart, yet copaiva is not generally used as a diuretic any more than nitrate of silver is generally used as a tonic. It would be simpler to discuss such articles, as well as mercury, iodine, arsenic, and some others, in a class without any name, which, as we have already said, implies no theory of their action. But, on the whole, the practical ad-

vantages of Dr. Wood's plan, with the single exception we have made, render it preferable to the classification of Pereira, or the ingenious one of Mr. Headland.

The description of each class is preceded by several pages of introductory remarks, of a practical character, which point out the therapeutic action and indications of the whole class. In these prefatory remarks, some of the most valuable observations in the whole treatise are to be found. We should like to point out many of them, as well as some of those, occurring elsewhere, but have not space to do so, and must content ourselves with calling attention to a few points.

Before doing so, however, let us remark that the work is not a treatise upon drugs alone. Physicians, as well as the public, have been too much in the habit of regarding drugs as the most important of therapeutic appliances, if not the only ones. Treatises on therapeutics often describe drugs alone, or give such a meagre account of other remedies, that the student is apt to look upon those other remedies as of little value. Dr. Wood has not fallen into this error. Under one head or another, he treats at length of the physiological action and the therapeutical use of cold and heat, of diet, climate, exercise, electricity, mental influences, regimen, hygiene, &c., and points out their value as means of treatment. Even the influence of artificial somnambulism, or what is commonly known as animal magnetism, is alluded to, and the slight value assigned to it that really belongs to it. Electricity is discussed in an article of no less than fifty four pages. The account is thorough, discriminating and practical, putting the reader in possession of the latest discoveries, and stating its use in special diseases. At the close of the article an allusion is made to the elimination of metallic substances from the system, by means of the decomposing agency of galvanism. This method has become very popular, of late, among charlatans, under the name of "Electro-chemical Baths." Dr. Wood alludes to this method, but does not express a decided opinion as to its practicability. We will only say by the way, that we have satisfied ourselves, by numerous carefully conducted experiments, that metallic substances cannot be withdrawn from the system, by a galvanic current thus applied.

Water, the one remedy of the hydrotherapists and their panacea for all human ills, is fully described as a tonic, a sedative, a diaphoretic and stimulant. Its therapeutic application, in the shape of the cold bath, hot bath, tepid bath, freezing mixture, fomentation, etc., are pointed out. We are glad to meet with a good description of the rational use of water, as a therapeutic agent. There has been a great want of precision among medical writers, who have written upon this subject. Dr. Wood has shown us the true method of its employment, and indicated the scientific rules which govern its application.

Diet is treated of chiefly under the head of indirect depletion. In the discussion of it, the common generalities with regard to the importance of diet are avoided. It is shown to be an efficient therapeutic agent. In the few pages which are devoted to this subject, the different kinds of diet which are appropriate to different conditions of the system, are indicated with precision and good judgment. We wish that our author had gone more into detail upon this matter than he has done. The subject deserves a careful and detailed account from the pen of every writer on therapeutics.

We have not time to speak critically, as we should like to do, of many important observations which Dr. Wood has made, and which are to be found scattered through the book under various heads. Most of those, which we

had marked for comment, must be omitted. We think it desirable, however, to call the attention of the profession to his statement, with regard to the use of the oil of turpentine in typhoid fever. Our own experience of it, in the way he recommends, has not been large. So far as we have tried it, our observations confirm his. The statement of so careful an observer ought not to be disregarded, and if the experience of the profession should bear out those statements, the oil of turpentine will prove a valuable adjuvant to our means of treating a most formidable disease. We can best present these views in Dr. Wood's language; and the quotation will serve as a fair sample of the author's style and way of treating a subject:—

"Though the oil may be of some use as a mere stimulant in this disease, (typhoid fever) it is, in that respect, of but comparatively little value, and cannot be depended on to the exclusion of a wine whey, carbonate of ammonia, and nutritious aliment, in low conditions of the fever. But the oil will accomplish what these cannot. It acts most happily in stimulating the diseased patches of Peyer's glands, and the isolated glands of the same kind, whereby the softened and disorganized matter is more readily thrown off, and the ulcerated surfaces disposed to heal, when they might otherwise be unable to do so. The remedy, therefore, is to be given at the period during which the discharge of the softened matter is going on, and ulcers are forming, or in existence. This is usually, I believe, about the middle, or towards the close of the second week. Before this time I count upon no material service from the oil. It is now that the tongue becomes *dry;* and the occurrence of the dry state of the tongue in a decided degree, is the signal for commencing with the use of the remedy. I give it usually in doses of ten drops every two hours, but sometimes increase to fifteen or twenty drops. At the end of twenty-four, or at the furthest of forty-eight hours, there may very generally be seen a return of moisture with a white fur on the surface of the tongue at the sides, for its whole length leaving the surface in the middle still dry and often cracked. With this amendment, there is often also a diminution of the tympanites, a cooler and moister skin, and a less frequent pulse. The same change goes on till the whole tongue becomes moist, and covered usually with a whitish fur, which then gradually disappears, commencing from the top and edges. Sometimes, even when there has been no dryness of the tongue in the case, I have found the oil to act favourably in ameliorating the symptoms; and frequently, when the disease has appeared to linger in its advanced stages, and, though not severe, to show a perverse disposition to hang on to the patient, I have seen it almost immediately enter into convalescence under the use of the remedy. Again, when the case is marked in its progress by the cleaning of the tongue by flakes or in patches, leaving a red and smooth surface, as if deprived of the outer layer of the epithelium and papillæ, and when the surface of the tongue, whether completely or only partially cleared, instead of remaining moist as it does in favourable cases, becomes very dry with an aggravation of the general symptoms, I take it for granted that there has been a corresponding unfavourable change in the intestinal ulceration, indicating the use of the oil. It is precisely under these circumstances that, previously to my original use of the oil, I had seen a majority of the cases that came under my notice prove fatal; and, since the use of it, only two. I do not claim for the oil any specific power over typhoid fever. It will not prevent death from intercurrent pneumonia, or meningitis, or various other sources of mischief; but I do think, as the result, too, of great experience in the disease, that so far as the mere affection of the intestinal glands and its direct consequences are concerned, it will vastly diminish the chances of a fatal issue. The reason why, in the special condition of the tongue last described, the favourable effects of the remedy may be almost certainly calculated on, is that at the commencement of the cleaning process, the proper idiopathic disease has about run its course, and would almost certainly end well, but for an unfavourable change in the condition of the ulcerated surfaces; and whatever, therefore, will favour the healing of these, will in all probability secure a favourable termina-

tion. I have been more particular in this account of the use of oil of turpentine in enteric fever, because I have great confidence in the efficiency of the remedy myself, and wish to prevail on others to use it by showing the grounds of this confidence, and pointing out the precise circumstances under which, according to my experience, it should be employed." (Vol. i. pp. 563–5.)

The indications and contraindications for the use of tartar emetic are admirably presented. We wish, however, that the dangers of giving it to infants had been urged in more decided language. Its powerfully sedative and depressing action upon the system during the first year of life, is so great, that we are satisfied death has sometimes followed its incautious administration to children of a year old and younger. So great is this danger, that we should be inclined to prohibit its use altogether in persons of so tender an age. The heroic treatment of pneumonia and inflammatory affections of the chest, which was brought into vogue by Rasori and others of the Italian school, is properly condemned. "I am bound to express my own conviction," says Dr. Wood, "that the practice is on the whole not to be recommended." In saying this, we believe he expresses the conviction of most of our judicious practitioners. At the same time, the control of tartar emetic over pulmonary inflammation is fully admitted and explained, and its judicious use advised.

Among the subjects which we had marked for comment, are chloroform, alcohol, the use of heat as a stimulant, cod-liver oil, the use of quinia in rheumatism, travelling and exercise as therapeutic agents, and others. But we must bring our remarks to a close, and refer our readers to the book itself for Dr. Wood's views with regard to these and all other remedies of the materia medica. The latest reliable discoveries in therapeutics are incorporated into the work, and described with the exactness and precision characteristic of the author.

Dr. Wood closes his preface with the remark that this work will probably be his last professional treatise. "Advancing years warn him that the time is fast approaching when a failure of faculties, or the termination of life will render labour in any new field impracticable." We fervently hope that in both these points he is mistaken. Dr. Wood has not yet exhausted the stores of his experience. We trust that a hale and hearty old age awaits him, during which he may have the health and the leisure to draw from those stores, both for the benefit of the profession and the community.

In conclusion, let us commend the treatise heartily to the medical profession, and add as a parting word that the typography of the book is excellent. It is printed with a type and on paper, which is worthy of the subject, and highly creditable to the publishers. E. H. C.

ART. XVI.—*Human Physiology, Statical and Dynamical; or the Condition and Course of the Life of Man.* By JOHN WILLIAM DRAPER, M.D., LL.D., Professor of Chemistry and Physiology in the University of New York. Illustrated with nearly 300 wood engravings. New York: Harper and Brothers, 1856.

THE work whose title is at the head of this article, has been but lately issued from the press, and comes from the pen of one of the most original thinkers in this country. Before the work reached us, we felt confident that

it would contain much that was original and novel; and in this we have not been disappointed; perusing it with interest. But we must say that many of the new views, in our opinion, will not serve to advance the interesting and difficult study of physiology; and I might add, that it is likely to teach the student many things that he will have to unlearn, if he pay due regard to the facts daily developed in experimental physiology.

Everything that is novel in connection with the subject of physiology is of interest to the student of medicine, for there is scarcely any branch of his studies so attractive; professing, as it does, to make clear the inner structure of that body, which it is his aim to keep in order, and to repair when deranged.

"To the medical profession as matters now stand, nothing is of more importance than the discrimination of physiological knowledge. Empiricism could not flourish as it does, if the structure and functions of the body of man were understood. . . . . It would not only tend to a repression of empiricism, but would also exert an effect in raising the standard of acquirement among medical men themselves. That a great revolution is impending in the practice of medicine, no one who is at all observant of the progress of science can doubt. The great physicians of the future will be great physiologists." (*Preface*, vi.)

In this the author states what is true, but we fear that the happy day when empiricism is to pass from our midst is very far distant.

The novelty of the work before us is based upon its ultraism, treating the science of physiology as a branch of physics—the physics of man—in a more prominent degree than we are accustomed to. The author thus asserts his hopes:—

"For my own part, I have no sympathy with those who say of this or that physiological problem, it is above our reason. My faith in the power of the intellect of man is profound. Far from supposing that there are many things in the structure and functions of the body which we can never comprehend, I believe that there is nothing in it we shall not at last explain. Then, and not till then, will man be a perfect monument of the wisdom and power of his Maker, a created being knowing his own existence, and capable of explaining it. In the application of the exact science of physiology, I look for the rise of that great and noble practice of medicine which in a future age will rival in precision the mechanical engineering of my times." (P. 25.)

There will, no doubt, but very few be found as bold in their hopes as Dr. Draper, but much of this boldness is in part due to the manner in which he often regards the human body.

"A mere machine or engine, which acts in accordance with the principles of mechanical and chemical philosophy, the bones being levers, the bloodvessels hydraulic tubes, the soft parts generally the seats of oxidation. But if we limit our view to such a description, it presents to us man in a most incomplete and an unworthy aspect. There animates this machine a self-conscious and immortal principle—the soul." (P. 24.)

He even looks upon intellectuality as one of the results of the assimilation of food.

"In the organism of plants, the various compounds wanted by plants are fabricated. Animals destroy these compounds, and in so doing maintain a high temperature, irrespective of atmospheric conditions, and give rise to the phenomena of motion and intellectuality." (P. 37.)

In order that the author may not be misunderstood by the language he uses, we would state that in another portion of his work he looks on the *mind* without beginning and without end—the body being the instrument through

which it works, and according to the development or perfection of that instrument so are its phenomena. On this special head more will be said in another part of this review.

With these points prominently before him, the author endeavours to make the various facts of physiology, chemistry, and physics sustain the position, going a step in advance, or a step aside of the most advanced post in physiology; and, however much we may admire the boldness and ingenuity of the arguments, we cannot but see many fallacies, either as entertained by him or by others before him. And still further, we believe that many of those hasty generalizations introduced into modern physiology, from partial or imperfect results of chemistry, retard instead of advance the science, from the fact that an author, having once advanced a theory and become its advocate, is reluctant to abandon it, especially when new discovered facts in subverting his theory furnish none other to replace it.

Who does not remember the tenacity with which our fathers clung to the phlogiston doctrine, and still later to the compound nature of chlorine (oxymuriatic acid), for years after facts were known subversive of these views: the same is true of Lavoisier's theory of respiration, as beautiful as it is erroneous.

We are inclined to believe, with Prof. Lehmann, that enthusiasm in the cause of organic chemistry has degenerated, among many physiologists and physicians, into a fanaticism, which, even in the best cause, tends to invalidate a host of truths in its endeavours to uphold some single fact. In this way its most zealous partisans becoming its worst enemies.

But let us proceed to review certain portions of this work in order, and in many instances it will become necessary to notice views recognized by many of the leading physiologists of the day. In the first chapter on the conditions of life, there are several fundamental points that it would be well to examine into.

"For the maintenance of the life of man, three chemical conditions must be complied with. He must be furnished with air, water, and *combustible matter*."[1] (P. 9.)

"No article is suitable for food except it be of a *combustible nature*." (P. 16.)

"The chief materials which a living being receives from the external world are, therefore, *combustible matter*, water, oxygen gas; and out of the action of these upon one another, all the physical phenomena of its life arise." (P. 16.)

"An animal in this point of view is an oxydizing machine, into the interior of which atmospheric air is constantly introduced. The active constituent, oxygen, satisfies its chemical affinities at the expense of those parts of the system which are wasting away; and, as the act of breathing, that is, the introduction of this gas, takes place day and night, waking and sleeping, so too must the production of burned bodies—a part escaping by the lungs, a part by the skin, a part by the urine. To compensate the loss which ensues, nearly 1,000 pounds of *combustible matter* must be used in the course of a year." (P. 18.)

Without citing any more passages bearing on this point, we would remark that there is no term which appears to us so misused and abused by many physiologists, as that of *combustion*. Now this is a word which has a strict signification, recognized by general use as well as by chemists, and yet physiologists are constantly misapplying it, supposing that they thus establish some important generalization. Physiologists have been forced to see the difference between combustion and the chemical changes in the animal body,

[1] All Italics in this review are our own.

but, reluctant to abandon a theory where they have no other to fall back to, they think to obviate the difficulty by giving a new definition to combustion; and a word that, in common and chemical sense, signified *chemical action resulting in the production of fire (light and heat)*, whether oxygen take a part in the reaction or not, is now so corrupted by physiological use as to embrace all action between oxygen and a combustible body; if this be accepted, the definition of combustion cannot stop here, but must embrace all action between *chlorine, iodine, &c., and combustible bodies.* There is no such violent change occurring in the animal body that can be assimilated to combustion, and the sooner this term is changed to *molecular and chemical action*, the fewer the erroneous theories that will be likely to find their way into physiology. An evil arising from the adoption of this term, and applying it to the chemical changes in the animal body, is that it leads to crude generalizations and utter disregard to the complex nature of these changes. There is no author that has come under our notice who insists more strenuously than Dr. Draper does, in connecting combustion and combustible with the physiological changes in the animal body.

Why announce food as combustible matter? There is no doubt that much of it is so, if dried and brought in contact with oxygen under certain conditions. If, however, we are to understand by the use of the term, that food sustains animal existence by its combustible nature being rendered conspicuous, we take issue with the author, and shall allude to it more fully a little farther on. The statement is an erroneous one, for combustible matter cannot embrace the whole range of animal food any more than non-combustible can that of vegetable; mineral *non-combustible* constituents are as absolutely essential for animal life as albumen, fibrin, or casein, and thus the annunciation is imperfect—something more is necessary to sustain animal life than "air, water, and combustible matter." It is taking a narrow view of the physical and chemical wants of man to state it thus.

The following, from Carpenter, is a far more correct and rational manner of announcing the three essential material conditions of life: "*Food*, or substances capable of being converted into the solid portions of the organized fabric; *water*, for the maintenance of the due proportion of liquid in its constitution; and *oxygen* for promoting various changes in the assimilated matter, by which it is applied to a greater variety of purposes, and also for uniting with the particles destined for excretion, so that they may pass off in the form in which they can be most readily got rid of." Food must contain all the elements of the body, however they may be classified with reference to the action of oxygen. This is but a common necessity of plants as well as animals: and although the food of the former is for the most part non-combustible, it would be erroneous to make any such general announcement with reference to plants, for they do consume a combustible (ammonia) that appears essential to its existence and growth.

That no article but a combustible one forms any constituent of food is known by all to be erroneous; 'tis true, the larger part of food consists of carbon and hydrogen in various states of combination, yet it is equally true that many substances enter into the composition of our food belonging to a very different class of bodies. To exemplify this fact, let us take a mixed fluid, regarded as food *par excellence*, namely, milk, which is constituted of casein, fat, sugar, phosphate of lime, chloride of sodium, and other salts in solution and suspension in water; here, the non-combustible phosphates and chlorides are as essential elements of nutrition as the combustible materials casein and fat; for if the phosphates be absent, the infant will be but imperfectly sus-

tained, and death will as inevitably ensue, although not so speedily, yet as directly a consequence, as if the casein or other combustible were absent. To the physiologist, it must appear that the 40 per cent. of phosphate of lime in the bones is as important as the gelatin in the same parts, and that the $\frac{1}{10}$ per cent. of iron is as important to the blood as the 5 per cent. of albumen. Of the proximate principles of the animal frame, there are one hundred well defined, and of these, twenty-nine are inorganic, and such as would be classed as non-combustible—some forming portions of the tissues, some in the blood, and others in the excretions. Of these, eighteen enter the body from without, ready formed, and are assimilated.

It may be argued that these non-combustible constituents are introduced through the medium of combustible matter; that this is so, arises from the composition of the food, rather than that they must be so introduced. A carnivorous animal takes its requisite amount of chloride of sodium with the flesh that it consumes; an herbivorous animal is not furnished with it through the vegetable food, and it therefore eagerly seeks for the salt in the dirt and soil *unmixed with combustible food*, and assimilates it none the less readily from having so received it. There is nothing illogical in supposing that were milk deprived of its phosphates and chlorides, these salts artificially prepared would restore to it its requisite property.

Therapeutics furnishes many instances of the power of man to assimilate non-combustible materials introduced into the stomach; for instance, take a person suffering from chlorosis with the thin pale blood circulating through the body, introduce the oxide of iron into the stomach, the blood will deepen in colour, and the requisite proportion of iron be restored to the globules of that liquid; in fact, so far as we can judge, this oxide of iron has been assimilated by the animal body as truly as a bit of muscle or bread would be.

It is clearly the desire of the author in the leading chapter of his work to impress the student with the belief that the *fundamental* sources of the operations of the animal body have somewhat the simplicity of machinery, especially such form of machinery as the steam engine, whose source of motion lay in the action of oxygen on combustible matter.

This may appear as an unnecessary criticism of the views of the author—a review of mere words—when the details of nutrition are given more completely in other parts of the work, and where in his subdivision of food into four classes, he puts down the fourth as salts, saying:—

"Any classification of food-articles, which does not contain this group, is imperfect; for salts are not only absolutely essential to organic processes, but also to the construction of many tissues. As an example of the former case, the chloride of sodium may be mentioned, and of the latter the phosphate of lime." (p. 28.)

It is precisely because his generalization does not agree with the facts, even as he states them, that this point is reviewed so fully. When an author lays down a law or a rule, it is done to facilitate the student in his studies, and enable him even to divine facts without the necessity of acquainting himself with each one in detail. A student will be apt to recollect most easily the generalizations, and if erroneous, he errs accordingly. The sooner that the student is made to look upon man as something more than a mere machine put in motion by combustion, the sooner will he find himself on the path of true physiological knowledge.

In the second chapter, the nature of food is discussed, its sources and classification, and the author adopts to a certain extent the not unfrequent division

of food in two classes, "Histogenetic or tissue-making, and calorifacient or heat-making," but he very properly remarks—

"It is, however, to be distinctly understood that these divisions are only adopted for the sake of convenience, and that they have no natural foundation. Thus it will be found, when we examine the function which the fats discharge, that though they are non-nitrogenous bodies, and are, therefore, considered as belonging to the class of respiratory food, there is every reason to believe that they are essentially necessary to tissue development, and that the metamorphoses of nitrogenized bodies can only go on in their presence. They are, therefore, as truly essential to nutrition as are the latter substances." (P. 27.)

Classification of food has been a favourite subject of modern physiologists, from the fact that the mind of man aims constantly at generalizations, striving to obtain some simple rule to aid in exploring fields yet unforbidden to the experimenter. When Liebig and Dumas held forth so prominently to physiologists the aid of chemistry, they eagerly seized upon it with the facts and errors, and the attractive but often erroneous theories; and to many of them they still cling, notwithstanding, that more recent experimental researches disprove their possibility; for so averse is man to be without a cause that they will rather believe in a wrong one than to suppose they know none.

It has always appeared to us an assumption unsustained by facts that one class of food more than another is productive of the heat in animals, or that fat and sugar give rise more directly to the absorption of oxygen and formation of carbonic acid. Strange as it may appear, these views have been widely received without being supported in the facts of chemistry; all that the chemist can do in experimental research of this character, is to imitate, as near as possible, the physical and chemical conditions of the animal. Let us then view the matter in this way, and place a bit of muscle with interstitial fat, in contact with air at 100°, and follow the changes hour after hour; softening and decomposition will ensue, and examination will show that the muscular fibre is the portion acted on by the oxygen, giving rise to various allied compounds that are ultimately transformed into carbonic acid and ammonia. What becomes of the fat in the mean time? It resists the action of oxygen, or small portions become converted into butyric, caproic, or other acids, and so remain without undergoing further change; it is a well known fact that in many places of burial, the nitrogenous portions of the body are entirely decomposed under the action of oxygen and moisture, while the fats remain almost unaltered, or their acids have combined with the ammonia of the decomposing tissues to form adipocire, which resists decomposition.

Again, take a portion of milk and place it in contact with air at a temperature of 100°, decomposition soon commences, the sugar is changed (without absorption or loss of oxygen) into lactic acid and resists all further alteration; some little of the acid of the fats become changed into more highly oxidized acids, but the casein passes through a series of decomposition, terminating in carbonic acid and ammonia.

With these facts, the most natural conclusion appears to be, that if any portion of the food rather than another is to be regarded as undergoing in the blood that form of oxygenation giving rise to carbonic acid, it would be the albumen, fibrin, &c., rather than the sugar, fat, &c.; but the truth is, it is vain to attempt to settle the changes which occur in the body by experiments in our laboratories. One great difficulty in imitating these reactions outside of the body, is the complex nature of the animal fluids which must have a marked effect upon the nature of chemical reactions; it is a well known fact, in chemistry, that very slight alteration of the conditions under

which we present substances to each other modify materially their reaction; thus, tartaric acid dissolved in water decomposes the carbonates very readily, but when dissolved in alcohol has no action on them.

The chemist, in none of his operations outside of the animal economy, operates with liquids containing so many principles and so complicated in their nature. The complication of the circumstances with the want of stability of the constituents, renders it impossible for the chemist to foresee results, and he can only grope his way along by absolute experiment. We are not to suppose that the different principles have different chemical affinities in and out of the body, but simply, that the exercise of these affinities is very much modified, and that there is yet but little hope of imitating them artificially. In search of truth, it therefore becomes absolutely necessary to study organic chemical facts apart from those of pure chemistry. There are no experiments illustrating this in a stronger light than those of M. Bernard, with the salts of iron and ferrocyanide of potassium.[1]

Solutions were made of lactate of iron and ferrocyanide of potassium; these, when poured together, produce a Prussian blue; a portion of the iron solution was injected into the jugular vein, and shortly after followed by a portion of the ferrocyanide of potassium, no Prussian blue was formed; and, in killing the animal, a few hours afterward, no blue colour was found in any part of the body, neither in the stomach, lungs, nor urine; yet these two substances existed together in the blood, and their characteristic reaction could be made apparent by adding a strong acid to blood drawn from the body shortly after the injection of the liquids. Other experiments quite as striking, bearing on the same point, were made by this distinguished physiologist. It is well said that when we explain and predict in physiological phenomena unknown results in chemistry and physics, we commence where we ought to end. First of all, experiments should be made on the living animal—from them and them alone, true physiological results and deductions can be obtained; thus, with reference to the changes that sugar undergoes, we know, when introduced into the stomach, it becomes converted into glucose by catalysis, it enters the blood under this form, it is rapidly changed into lactic acid by catalysis of another nature, *and there our experiments cease;* we may suppose that it decomposes the carbonates, and in its turn becomes converted into carbonic acid and other products by absorption of oxygen or by reconstruction of its elements; all these may be possible, they have not been demonstrated, and to construct theories upon them may amuse, but may at the same time mislead.

There is no doubt that physiologists have to modify or abandon entirely their present view about fat as being only respiratory food; Prof. Draper, in alluding to the fat in the blood, admits this.

"The view heretofore taken that this class of substances is not histogenetic, but only respiratory, requires to be modified. There is reason to believe that the blood-cells themselves cannot be formed except in the presence of oil, which is also necessary to enable nitrogenized bodies to assume the ferment action. The nuclei of cells contain fats, as do also embryonic structures generally." (P. 123.)

"The fats are necessary in the production of fibrin, and for the nuclei of the cells; but, besides these histogenetic relations, they eventually, with the exception of the liver fat, undergo oxydation, and so minister to the support of a high temperature." (P. 125.)

But we must not be misled by this, from supposing that fibrin and albu

[1] Archiv. Gén. de Méd., vol. xvi. p. 224.

men, or their resultants, when they have fulfilled their histogenetic functions, do not equally undergo oxydation or other chemical decomposition developing heat. It may surprise some, when we assert that for the present we have no experimental authority for stating that this or that class of food serves more especially in giving rise to animal heat; and, notwithstanding that the author under review admits this in some measure, as seen by the last citations, yet, with the idea of combustion ever before him, in another part of his work, he would leave the reader under the impression that the fats are directly subservient to the respiratory organs; for, speaking of the lacteals, he says:—

"Correctly speaking, however, the lacteals are only lymphatics, which are taking up oil presented to them. In view of the use which the oils subserve in the animal economy, the lacteals are in reality an appendix to the respiratory system." (P. 88.)

"That the lacteals are connected with respiratory digestion, seems to be plainly indicated by the circumstance of their occurrence." (P. 88.)

Most physiologists, we think, will be reluctant to admit that the lacteals are to be regarded as an appendix to the respiratory system, any more than any other portion of the digestive organs. The food, whether absorbed by the stomach or by the lacteals, has yet to undergo further assimilation in the blood; and, with reference to the chyle, this becomes more evident when we regard the composition of this liquid, and see that out of 100 parts of solid matter contained in it, only 9 are fat, and 70 albuminous substances, arising from the digestion of nitrogenous food. With these facts to rely on, we cannot consent to the announcement that the "lacteals are only lymphatics to take up oil." It is somewhat surprising that the author should make the statement, when in other portions of his work he so clearly states what the lacteals really do take up; it can only be attributed to his effort to make to appear simple, processess that are in their nature complex.

It is true that the higher we mount in the scale of creation, the greater is the subdivision of organs for special results; thus, among the lowest orders of animals the exterior surface performs all the functions of kidney, skin, and lungs; an internal sac the whole process of digestion; while among the more elevated, many organs supply the place of these two; yet even man is far from having a separate organ for every single end. The salivary glands furnish liquid to enable us to swallow our food; it also imparts certain chemical action to a portion of it—the stomach is both a digestive organ and an absorbing surface, and so the lacteals are not to be set down as expending their entire force, or even the greater portion of it, in the absorption of merely fat, and that all other absorption by them is but complementary.

From this we will pass to the subject of the blood and respiration. There is one matter connected with the composition of the blood that most treatises on physiology misstate, or leave the reader under an erroneous impression, which Dr. Draper has but slightly touched upon: it is in reference to the gaseous constituents of the blood. Ask most students, and I might even add the profession at large, whether it is in venous or arterial blood that the greatest amount of free carbonic acid is to be found? and the answer will be, the venous, of course! and if inquiry be further made as to who is the most reliable authority on this subject, we will be told Magnus. In fact, if we refer to *Müller's Physiology*, p. 345, Lond. ed., 1839, it reads thus: "Both kinds of blood contain carbonic acid gas; venous blood contains most carbonic acid gas—arterial blood most oxygen;" yet he gives Magnus' results; which are

reproduced here from the original memoir,[1] with an additional column, giving the proportion of gas contained in 100 parts of blood. As the experiments were made with varied proportions, it is necessary to have this for a clear view of the subject:—

	Quantity of blood in centimetres.	Carbonic acid.	Oxygen.	Nitrogen.	Carbonic acid.	Oxygen.	Nitrogen.
		VENOUS BLOOD.			REDUCED TO CONTENTS IN 100 PARTS OF BLOOD.		
Horse . .	125	5.4	1.9	2.5	4.3	1.5	2.0
" . .	205	8.8	2.3	1.1	4.3	1.2	.5
" . .	195	10.0	2.5	1.7	5.1	1.3	.9
" . .	170	12.4	2.5	4.0	7.3	1.4	2.3
Calf . .	153	10.2	1.8	1.3	6.6	1.2	.9
" . .	140	6.1	1.0	0.6	4.3	.7	.4
		ARTERIAL BLOOD.					
Horse . .	130	10.7	4.1	1.5	8.2	3.2	1.1
Calf . .	123	9.4	3.5	1.6	7.6	2.8	1.3
" . .	108	7.0	3.0	2.6	6.5	2.8	2.4

From the above, it will be seen that, twenty years ago, Magnus proved by a series of experiments, the most ingeniously devised and skilfully executed of any experiments ever made upon the blood, that arterial blood not only contains more oxygen than the same quantity of venous blood, but also more carbonic acid in solution. We know of but two or three physiologists who have noted these facts aright, and the consideration of them is of the utmost importance in a truthful examination of the phenomena of respiration, in a manner to be mentioned a little further on.

We would not review what Dr. Draper says on the subject of the action of air on the blood, did we not conceive that experimental results are proving that oxygen has a complex action on the blood, one likely to shake our faith in the much admired simple theory. The following is a common view, as stated by the author:—

"The cells, which constitute the other chief portions of the blood, are necessary to the production of a high temperature, by constantly transferring oxygen from the cells of the lungs to every part of the body . . . . the plasma serves, therefore, for the general nutrition of the system, and the disks, by transferring oxygen from point to point, discharge that part of their duty which is connected with the production of heat." (P. 126.)

This narrow action of that curious agent, oxygen, will be more and more disproved every day. The blood cells absorb it—of that there can scarcely be a doubt—but are we to suppose that the albuminoid, fatty, and other matter in the plasma of the blood are not altered and assimilated by it, as it is carried by the cells through the mass, giving rise to the many different forms of substances requisite for the muscular, nervous, tendinous and other tissues, for the bile and other secretions, &c.? We are of the opinion that the great and immediate result of oxygen in the blood, is to complete the assimilation and structure of the dissolved food that enters it, and to aid in the necessary alteration of the exhausted tissues that are to be removed from the body. Dr. Draper admits its importance in changing albumen into fibrin. The change of the constantly-forming sugar of the liver into lactic acid is due to the presence of oxygen in the blood, and, no doubt, when experimental results enable us to penetrate further into the mysteries of the action of oxygen, the present

[1] Annales de Chimie et de Phys., 1837, vol. lxv. p. 185.

prevailing notions will be materially altered. Until then, we must grope along with the feeble light we have, or be misled by the *ignis fatuus* of a plausible theory.

If we are to take the teachings of physiologists of which Prof. Draper is a type, the oxygen must be looked upon as serving almost exclusively for the production of animal heat.

"Reduced to its ultimate conditions, the evolution of animal heat depends on the reaction taking place between the air introduced by respiration and the food, and as either one or other of these is touched, the result may be predicted." (P. 182.)

"In every instance, we assert that the production of animal heat is due to oxidation taking place in the economy, and giving rise to carbonic acid, water, and other collateral products." (P. 182.)

"If there be abstinence from food, since the introduction of air by respiration goes on without abatement, the body itself must undergo oxidation, lose weight, and emaciation occur." (P. 183.)

Although we admit that most, if not all, animal heat is derivable from chemical agency, we cannot admit that the simple statements above convey any adequate idea of the nature of those chemical changes. The author would lead us to suppose that oxygen alone acts in the production of animal heat by a perfect destruction of the substance acted upon, resulting in the formation of carbonic acid and water, and, still further, that this action is between the air and food which enters the blood, and that it is not until the food in the blood is exhausted that the oxygen expends itself upon the tissue of the body.

What are the facts that warrant these conclusions? Oxygen is taken into the circulatory system through the lungs, and carbonic acid and water evolved. Is it not equally true that certain portions of the food and water are taken into the circulation through the coats of the stomach, and from the same surface gastric juice is thrown off? *The lungs, like the stomach, perform a double action, without there being necessarily any immediate connection between those actions.* This much we know, that the changes in the blood and tissues give rise to liquids (embracing solids in solution) and gases. These pass from the blood either as secretions or excretions, and, as the various organs are adapted, so do they operate. The liquids pass through the liver, kidneys, stomach, &c.; the gases through the lungs, skin, and intestines; and, according to the special adaptation of these, so do they predominate in their activity of this function. Carbonic acid gas passes off most readily from the lungs, because the displacement action of the air acts more readily through the delicate membrane of the air-cells than through the thick skin, and as the skin becomes more delicate in animals, so does the amount of carbonic acid discharged in this way increase. Much of the carbonic acid in the blood, doubtless, arises from processes analogous to fermentation; and this conclusion is a rational one, when we consider that the proximate principles of the animal body are usually composed of a large number of atoms of four or five elements, so that small causes may decompose them, and rearrange the multitude of atoms under new forms.

So far as the development of heat is concerned by the agency of oxygen, it matters not whether that element combines with certain substances to form uric acid, urea, creatine, &c., or with fat and sugar to form carbonic acid and water, it is a well established fact that the amount of heat generated by oxidation does not depend on its character, or on the resulting products, but simply on the amount of oxygen that is combined. Physiological experiments are leading us more and more to the conclusion that oxygen has a vast deal to do in the blood, and of more importance than burning up sugar and fat.

We hold no particular theory about the precise manner in which oxygen acts to produce heat, all that we insist on, is not to imagine operations unsustained by facts or analogy.

The following views of Regnault, in regard to the chemical phenomena of the animal body, are certainly correct:—

"The study of chemical reactions in our laboratories, and in vessels which take no part in the phenomena, are very different from the study of those which take place in organized beings; here the chemical reactions take place in vessels the matter of which most commonly participates in the changes, and thus render the phenomena incomparably more complex. . . . . It is very probable that animal heat is produced entirely by chemical reactions that take place in the economy, but the phenomena are too complex for us to calculate it from the quantity of oxygen consumed. . . . . Besides, in all the transformations and assimilations of substances which take place in the organs, there is disengagement or absorption of heat; but the phenomena are so complex, that there is little probability that we will ever be able to submit them to calculation."

In treating of the escape of carbonic acid from the lungs, Dr. Draper has overlooked the recent experiments of M. Verdeil which have such a direct bearing on this subject. It is surprising that it should not have been observed sooner that the tissue of the lung was acid. Verdeil obtained a peculiar acid from it, which he called *pneumic acid.* Uric acid has since been found in small quantity.

This acid condition of the lungs must bear directly upon the passage of free carbonic acid into the lungs. The blood enters the lungs alkaline, with bicarbonates and some free carbonic acid, it comes in contact with an acid tissue, and is it not a most natural conclusion that the acid of the lungs should set free some of the carbonic acid in combination with the alkali, and thus put it in a more favourable condition for passing into the air-cells of the lungs? Yet further, this liberation of free carbonic acid is the only way we can explain the larger amount of this gas in the arterial over the venous blood (and that just after the blood had come from the lungs), exhibited by the experiments of Magnus recorded on a previous page. It may be asked, how does this account for it? The venous blood comes from the right heart to the lungs, much of its carbonic acid exists in combination that will not admit of its passing in the air-cells by the mechanical actions which are in play to bring it about, but the acid of the lungs soon obviates this difficulty, by combining with a portion of the alkali, liberating carbonic acid. The blood in the extreme capillaries thus has a large increase of free carbonic acid, a portion of which passes into the cells of the lungs—but yet not all the excess—and the blood finds its way to the left heart, oxygenated by absorption from air, but yet with more *free carbonic acid* than it had when it entered the lungs. The blood is now distributed to the tissue, and this excess of carbonic acid may in part combine with alkalies, &c.

One of the most marked set of experiments ever made, that sustain this view, were made by M. Bernard prior to any discovery concerning the acid of the lungs; and, at the time they were made, the author attributed the results to some catalytic action of the tissue of the lungs; but they are now explained by a very simple and natural chemical decomposition. The experiments are so striking that we will give a statement of them here.[1]

The first experiments were with cyanide of mercury, which, when mixed with gastric juice, underwent decomposition, giving rise to free hydrocyanic

[1] Archives Gén. de Méd., vol. xvi., 1848, p. 219.

acid; if, however, it be mixed with blood, no free hydrocyanic acid is formed. When this salt was introduced into the stomach, poisonous effects of hydrocyanic acid were soon apparent, the animal dying under the well-known effects of this poison. When the same salt was introduced into the blood, the same effects resulted, and the tissues gave out the odor of hydrocyanic acid. The last fact arrested the attention of M. Bernard, and this philosopher and physiologist, "seeing that the blood did not decompose the cyanide of mercury, and knowing that acid disengaged it freely, it was reasonable to suppose that, after it was introduced directly in the circulation by the veins, the cyanide of mercury was afterwards carried into organs where it would encounter acid liquids capable of decomposing it, and giving rise to hydrocyanic acid, which killed the animal; the organs may be the kidneys or stomach. In fact, if we mix cyanide of mercury in the acid urine of a dog, either in the kidneys or in the bladder, decomposition manifests itself in a few moments. The acid coats of the stomach act in the same manner, and I have already proved that substances injected in the blood could pass easily into the gastric secretion." To test whether or not this was so, an experiment was made, in which all the acid secretions were suppressed.

The abdomen of a small sized dog was opened, the stomach, kidneys, and bladder were extirpated, the proper ligatures being applied. Shortly after this operation, cyanide of mercury was injected into the femoral vein, and in half a minute respiration became difficult, the animal soon died in convulsions, exhaling from its throat a strong odor of hydrocyanic acid, and on being dissected, all parts of the animal were impregnated with the same odor, and none of the liquids or the body were found acid. In this experiment the cyanide was decomposed as rapidly as when all the organs were intact.

The source of the decomposition was thus reduced to the tissues; as to the muscular tissue, it was tested by injecting the cyanide into the femoral artery and examining the blood of the femoral vein, which gave no odor of hydrocyanic acid, but contained the cyanide which was immediately decomposed by the addition of a like hydrochloric acid. The result was very different when the cyanide was injected into the femoral vein; in less than a minute the animal died, exhaling from the throat a strong odor of hydrocyanic acid.

It became very evident that the decomposition took place in the lungs and when pieces of muscle, skin, liver, and lung were placed in a solution of cyanide of mercury, the lung alone decomposed it. Bernard, in stating the fact says: "*Thus the cyanides, in passing through the pulmonary tissues, are decomposed as if submitted to the action of an acid.*" This is put in Italics, as it was remarkable that he did not suspect the acid character of the lung, attributing it to a catalytic action; and it was not until three years afterwards that Verdeil discovered the acid of the lung. Bernard, at the time he made the experiments with the cyanides, says, *that certain bicarbonates are also decomposed in the blood at the moment this fluid traverses the lungs.*

"For this purpose all that is necessary is to inject rapidly in the jugular vein a solution of bicarbonate of soda; very soon the animal dies, and on examination the lungs are found to be emphysematous and distended. There exists gas in the largest branches of the pulmonary arteries, and sometimes even in the ventricle of the heart. This gas could only have arisen from the decomposition of the bicarbonate, and the animal dies as when air is introduced into the veins. It is, however, very easy to avoid killing the animal by introducing the solution of bicarbonate very slowly; it thus happens that, in passing little by little into the lungs, it is gradually decomposed, so that the carbonic acid can be dissolved in the blood and not arrest the circulation, as happens when much gas is introduced at once."

In conclusion, the experimenter remarks: "We see that certain substances, as the cyanides and bircarbonate, which usually require the intervention of an acid to decompose them, can nevertheless be decomposed in the alkaline blood. But to effect this decomposition, *the lung is necessary, which appears to be the special locality of that kind of chemical change.*"

When it is remembered that the above experiments were made without reference to any preconceived notion or ultimate theoretical application, they become of great value in our physiological studies. Here we find an author trying to find the source of chemical change which under ordinary circumstances require an acid, he finds himself conducted to an organ which he did not suppose was acid.

These facts of Bernard are made to occupy some space, from the fact that they are not alluded to in the physiology under review, and because physiologists can no longer disregard them, in connection with M. Verdeil's discovery of pneumic acid, when treating of escape of carbonic acid from the lungs.

Under the subject of secretions, Dr. Draper lays some stress on their pre-existence in the blood, and their passage into the glands by a process of exudation; he does not, however, entirely repudiate the idea that the cells in some of the glands perform a part in the necessary metamorphoses; his views on the subject are embraced in the following paragraph :—

"The cases in which the influence of cells is indisputable, are those which offer to us combinations of progressive metamorphoses. Of these, the most striking instance is the preparation of the spermatic fluid. Perhaps we should not be very far from the truth if we consider all those secretions in which the materials are in a state of retrograde metamorphosis, or in a descending career, as arising by mere filtration, and those which are ascending to a higher grade as due to cell agency; between the two, there being an intermediate class, the phase of which is stationary, and in which cells may or may not be necessarily involved, as for instance, the transmutation of one fat into another, or the preparation of sugar from albuminoid bodies." (P. 192.)

We should say nothing more on this subject did not the author, under the head of special secretions, classify among those formed in the blood, some which we do not think are thus formed; as, for instance, the bile.

"I therefore regard the bile as an excretion of materials which are decomposing and ready to be removed from the system. I incline to the supposition that much of it is derived from the cells of the blood, the life of which is only temporary." (P. 203.)

"In any discussion of the action of the liver, it is thus to be constantly borne in mind that the portal blood consists of two portions, systemic venous blood and matters absorbed from the digestive apparatus. Derived from the first of these portions, we trace the origin of the bile to waste of the tissues, or to the blood-cells on their downward career; and hence we arrive at the important conclusion that every proximate constituent of the bile pre-exists in the systemic venous blood." (P. 203.)

This is contrary to all direct experiments on the subject, as those of Müller and Kune. Arrest the action of the liver in any way whatsoever, and bile does not exhibit itself in the blood; also in certain diseases, as fatty degeneration of the liver, where its cellular structure and functions are profoundly effected, we have no evidence of bile in the blood. Were the bile formed in the blood, the contrary should occur, as in the case of urea, which is proved to pre-exist in the blood. If the kidneys be extirpated or the action be suppressed by fatty degeneration or otherwise, urea increases in quantity in the blood and other parts of the body, as the skin and intestines, that eliminate it to a certain extent.

So far as we are borne out by experimental facts, there is no reason for supposing otherwise than that the cell action of the liver forms bile as well as sugar and fat; it is an organ whose functions are of the utmost interest to the physiologists, who have been amply repaid for their recent experimental investigations of it.

The peculiar properties of endosmose and exosmose are attributed entirely to capillarity, which we know is altogether untenable, and is so considered by the leading authors on this subject; but we cannot stop to review this now, nor the new theory of the circulation of the blood, which was first advanced by Dr. Draper about ten years ago; we examined it with much care then, and have often recurred to it since, but could never be convinced of the truth of it, from it being at fault in its very basis, namely, the capillary attraction in the terminal extremities of the veins and arteries. The fact is, we cannot see how any capillary attraction can occur under the circumstances, but as this involves a more complete review of capillary attraction than this article would warrant, we will have to pass it over, and probably recur to this special question on another occasion.

We would have been pleased to have had more said about the electric currents in the human body as developed by the interesting experiments of Matteucci and Raymond Du Bois.

Prof. Draper, treating physiology as a branch of natural philosophy, divides it into statical and dynamical physiology: "the one including the conditions of equilibrium of an organized form, the other those of its development—development being no more than its motion."

This division is doubtless a very philosophic one, and may lead to useful results, if due precaution be used in not burdening the statical portion with imperfect and ill digested theories, which only serve to heap up confusion and retard the true progress of dynamical physiology, fraught as it is with as much interest and obscurity.

There is much in this part of the work that we should like to review, either from the novelty of its nature or novelty of the manner in which it is advanced. We will, however, remark principally upon the author's views of the agency usually known as vitality or vital agency, and his ideas of progressive development, which are as extravagant as those of Lamark, or the author of the *Vestiges of Creation.*

He thinks proper to abandon the use of the term vitality, or vital agent, and supplant it by the use of the term "plastic power," or power of arrangement.

"The preceding elementary examination of the circumstances under which plants grow, has led us to the inference that in their germ there resides a plastic power, whose function is to model the organic matter, as it is furnished by the sunlight, into definite shapes or organs." (P. 468.)

"Are plants, in truth then, nothing more than temporary states through which material substance is passing (because of some original physical impression made upon it), and the present operation of external circumstances? Can individuality be applied to them any more than to a flame? Instead of being individuals, are they not rather the transitory results of an operation?" (P. 470.)

"The organic series—an expression which is full of significance and full of truth, for it implies the interconnection of all organic forms—the organic series is not the result of numberless creative blunders, abortive attempts, or freaks of nature. It presents a far nobler aspect. Every member of it, even the humblest plant, is perfect in itself. From a common origin, a simple cell, all have risen; there is no perceptible microscopic difference between the primordial vesicle which is to produce the lowest plant, and that which is to produce

the highest; but the one, under the favouring circumstances to which it has been exposed, has continued on the march of development; the career of the other has been stopped at an earlier point. The organic aspect at last assumed, is the strict representation of the physical agencies which have been at work. Had these for any reason varied, that variation would at once have been expressed in the resulting form, which is, therefore, actually a geometrical embodiment of the antecedent physical conditions. For what reason is an offspring like its parent, except that it has been exposed, during development, to the same conditions as was its parent." (P. 466.)

Nor is this plastic force (as we understand it, the cell-forming force) at all different in the vegetable and animal creation; whatever may be the difference of ultimate form, it is due to external circumstance.

"All animals, no matter what position they occupy in the scale of nature, unquestionably arise in the first instance from a cell, which, possessing the power of giving birth to other cells, a congeries at last arise, the size and form of which is determined wholly by external circumstances. In all cases, the material from which these cells are formed is obtained from without; and, whatever the essential shape of the structure may be, the first cell is in all instances alike. There is no perceptible difference between the primordial cell, which is to produce the lowest plant, and that which is to evolve itself into the most elaborate animal.....The germ which produces a lichen, obtains from materials around it the substance it wants as best it may; but the germ which is to end in the development of man is brought in succession under the influence of many distinct states." (P. 489.)

All that the author says goes to show that all primordial cells are under the operation of the same plastic force, without any innate capacity of pursuing a fixed course, yet he admits that the cell will develop itself into the likeness of its parent if submitted to the same condition through which its parent passed. We would here stop and ask, how can this be true and all primordial cells be looked upon alike? The very fact, that of the respective cells having a capacity to assume the form of the parent under any circumstances, proves that there is a special directive force in all cells according to their origin.

Adopting the views already mentioned, Prof. Draper has for consistency's sake to adopt the doctrine of progressive development in all its length and breadth.

"Starting from a solitary cell, development takes place, and, according as extraneous forces may be brought into action, variable in their nature, and differing in their intensity, the resulting organism will differ. If such language may be used, the aim of nature is to reach a certain ideal model or archetype. As the passage towards this ideal model is more or less perfectly accomplished, form after form, in varied succession, arises. *The original substratum or material is in every instance alike; for it matters not what may be the class of animals or plants, the primordial germ, as far as investigation has gone, is in every instance the same. The microscope shows no difference, but, on the contrary, demonstrates the identity of the first cell, which, if it passes but a little way on its forward course, ends in presenting the obscure cryptogamic plant, or, if it runs forward toward reaching the archetype, ends in the production of man.*" (P. 506.)

The microscope is expected to unfold the secret mysteries of the germ, and if it shows none between that of a cryptogamic plant and that of man, then the germs are identical; as well might the chemist say there was no difference between a bird and a dog, because chemical analysis showed them to be alike in constitution. The author does admit that there is something in the cell, a condition at least of "plastic force," to which neither chemistry, nor physics, or the microscope could conduct him—how does he arrive at it, then? by its effects only—and in the same way we see more than that in cells—we see

them developed in different directions, even when submitted to the same conditions (a grain of wheat and an apple seed placed side by side in the ground), and therefore conclude that there is a peculiar directive force to each class of primordial cells.

The author's views are not advanced without supposed proofs being adduced to sustain them, and to review them all would be going over the ground that many have done before us, and besides, we would transcend the limit allowed; but one or two of these will be mentioned:—

"Thus man himself, in succession passes through a great variety of forms, from the condition of a simple cell; these forms merging by degrees into one another, the form of a serpent, of the fish, of the bird, and this not only as regards the entire system in the aggregate, but also as regards each one of its constituent mechanisms—the nervous system, the circulatory, the digestive. Now, in the passage onward, these forms are to be regarded, as has been well expressed, each one as the scaffolding by which the next is built; and just as man, in his embryonic transit, presents these successive aspects on the small scale, so does the entire animal series present them in the world on a great scale." (P. 507.)

"Without going into tedious details, man presents, as regards the most important of his constituent structures, his nervous system, the successive characteristics of an avertebrated animal, a fish, a turtle, a bird, a quadruped, a quadruminous animal before he assumes the special human characteristics. This is his cycle of life." (P. 513.)

Add to this the example of other animals, as the frog and the moth, which pass through two or three different forms, and we have the character of facts advanced to sustain this strange doctrine.

As regards the changes of a frog or moth from a tadpole or caterpillar, they are but stages in the life of one animal, there is no complete organism until all these changes are accomplished. A tadpole may remain such for a considerable length of time, but never becomes a complete organism; it cannot produce a germ; its utmost capacity is to be changed to a frog and nothing else; the same is true of the caterpillar; in these forms they resemble other animals, to be *like them*, they must go over an impassable gulf—in these we are dealing with embryos, and not animals.

As to man having successive characteristics of the serpent, fish, bird, &c., he never is like either of these animals mentioned, no imaginable arrest of development could make a fish or a serpent of a man, he would be a miserable specimen of either, and never could be classified with any perfect organism. It is clear that whatever similitudes a man has in his embryotic condition, there is but one point that it can stop at—that is man.

But we must leave this part of the subject without our conviction being in the least shaken, that every cell, primordial or otherwise, has its specific endowments.

The boldness of the author does not stop with his views of the gradual development and perfection of the organic kingdom, but he would seek in the nervous structure proof positive of the existence of a soul and of its immortality. The principal of his arguments are based on an inverse reasoning from one set of known facts; thus, giving the nature of light to determine what must be the structure of the organ of vision; or, giving the construction of the eye to determine the nature of light; presuming that this and similar facts can be made out, the author goes on to say:—

"Given, the structure of the cerebrum to determine the nature of the agent that sets it in action. And herein the fact which chiefly guides us in the absolute analogy in construction between the elementary arrangement of the cere-

brum and any other nervous arc . . . if the optical apparatus be inert, and without value save under the influence of light—if the auditory apparatus yield no results save under the impression of sound—since there is between these structures and the elementary structure of the cerebrum a perfect analogy, we are entitled to come to the same conclusion in this instance as in those, and, asserting the absolute inertness of the cerebral structure in itself, to impute the phenomena it displays to an agent as perfectly external to the body, and as independent of it as are light and sound, and that agent is the soul." (P. 285.)

"The principle which obscurely animated the germ, is the same which in a higher way animates the embryo, and this again is the same which, in a more exalted condition, animates the infant and the man. The cloudy speck which ushers in the phantasmagoria of life expands as the great Artist directs, until every lineament has become visible."

"That active agent which was first laid in a fold of the germinal membrane was not annihilated when its type of life was changed to placental, and therefore aquatic respiration. It withstood the shock when again, after a due season, it was suddenly made to breathe the air. Arrived at the mature condition, there is not in its companion body a single particle that was present at birth. All has changed. And, what is still more important, not only has there been interstitial removal, but, in succession, the very nature of every one of its organs are changed. It is needless now to repeat how many different systems of nutrition it has depended on—how many sorts of stomachs in succession it has had—how it has breathed by a membrane, by gills, and by lungs—how it has carried on its circulation, without a heart, with a heart of one cavity, and finally with one of four. Through all these losses and changes the immaterial principle has passed unscathed, and even gathering strength. In the broadest manner that a fact can be set forth, we see herein the complete subordination of structure and the enduring character of spirit. Whatever may be the mechanism that is wanted, it is in readiness for its time; and when it has finished its duty, is neglected and disappears. There is, therefore, a sound reason in the conclusion to which mankind, perhaps from a mere instinctive impression, have come, that the soul will exist after death, for, after surviving so many mutations, the removal of so many of what seemed to be its firm and essential supports, we are justified in expecting that it will bear without ruin the entire withdrawal of the whole scaffolding." (P. 549–50.)

We have thus quoted from the author, to give the reader some ideas of his views as regards the existence and immortality of the soul, and we leave it to the reader to reflect how far his arguments may warrant the conclusions.

The chapter on the races of man and his intellectual qualities has many points of interest; he adopts the doctrine of the unity of the races, advancing the usual arguments to sustain its position.

With these views we leave Dr. Draper's work, and feel assured that any one reading it will be much entertained and instructed; although they will find much in it, as set forth by this review, which it will not be safe to adopt—especially his generalizations—which are usually too broad, and much simpler than the complicated facts admit of.

The style in which the work is composed we can speak of in the highest terms, and its typographic execution has seldom been surpassed by that of any medical work issued from the press of this country, and the wood-cuts are unequalled.

J. L. S.

ART. XVII.—*A Treatise on the Practice of Surgery.* By HENRY H. SMITH, M. D., Professor of the Principles and Practice of Surgery in the University of Pennsylvania, etc. etc. *Illustrated by two hundred and seventy-four engravings on wood.* Philadelphia: J. B. Lippincott & Co., 1856. 8vo. pp. 828.

No intelligent member of our profession can view with indifference the appearance in this country of a respectable work upon any branch of the healing art. Notwithstanding the lamentations prevalent of late years, we are inclined to trust in the right feeling and discrimination of the medical readers of our land; being convinced that they will join us gladly in extending a cordial welcome to every home production which may lessen the demand for works of alien birth; at the same time that they will undoubtedly sustain us in preferring the foreign to the native competitor, whenever the latter is inferior to the former. We yield to no one in earnest zeal for the promotion and encouragement of American medical literature, not even to those who have latterly made so much display of patriotic sensibility on the subject;—and we confidently appeal to the pages of this journal, from its commencement, as showing the sincere and hearty reception which has invariably been extended to every native work, of real merit, and the prominent notice always taken of them. We can conceive, however, of but one way of preventing the reprobated reprints—the obvious but difficult one of superior effort on the part of American writers.

The monopoly of excellence in such pursuits needs no artificial fostering; and, in our opinion, can only be impeded by the retrograde machinery of prohibitory laws and impositions. These are the expedients of a feebleness and immaturity which we would fain hope is no longer the condition of American authorship. They are not justified by any limited demand for meritorious works, and would be too apt to prolong the very state of literary languishment complained of, by encouraging the mushroom development of crudities which, under present self-regulating influences, could never venture into light. We look confidently to those who hold the watch-posts of our calling—the hospital surgeons and professors, and to the able and accomplished in our private ranks, to remove the stigma cast upon us. If really competent and earnest in their endeavours to supply what is needed to secure our independence, they must eventually succeed in effecting the great end desired, while they will, as hitherto, gather in their own ample harvest of reward.

Under these impressions, we must regard with peculiar interest any new work by a Professor of Surgery in the University of Pennsylvania. We cannot forget that the time-honoured seat he occupies was once the fountain-head of surgical wisdom and experience in America. Whatever comes to us, even now, with the seal of its authority, must be tried by the high standard which it was the first to raise and long rigidly enforced. We need not dwell upon the responsibility thus involved in the publication of another University Class-book on Surgery, or on the elevated character unavoidably expected in a production armed with the prestige of a source around which cluster some of the highest associations in American surgical annals. The well-known text-books of his predecessors, and the more formidable, because contemporary, rivals from the British schools, forcibly remind us that in the new enterprise there is not only an old reputation to sustain, but a new one to establish. The competition with the past and present thus necessarily encountered by the

new candidate for the post of surgical preceptor, renders it necessary for us not only to inquire into the merits of the volume as the surgical statute book of the future pupils of the University, but at the same time to sift its qualifications as the substitute for similar and well established works of transatlantic origin—in short, to subject it to the tests which must, whatever be our action, determine its position as an acquisition or a burden to our didactic literature.

The difficulty of our task is in some measure increased by the ambitious title adopted by the author. The comparison of his one volume "Treatise," as already intimated, is inevitable with the two volume "Epitome" of Dorsey and the two volume "Outlines" of Gibson; to say nothing of the "First Lines" of S. Cooper, the "Vade Mecum" of Druitt, the "Manual" of Fergusson, and the later essays of Miller, Pirrie, and Erichsen. These are all *verba magistri;* but, with the exception, perhaps, of Erichsen's, not one of them claims to be a treatise, while there is no one which is not, or was not in its day, at least, as much entitled to the claim as the one before us.

Dr. Smith proposes his "Treatise" as a "Text-book" to be used as an "adjuvant to his lectures." He says also that he "has endeavoured so to arrange it that whilst it will recall many of the opinions taught in his course, it will also facilitate the progress of the young surgeon, and prove useful to him as a work of reference in the responsibilities of early professional life."

The preface further informs us that—

"Although the title of Practice of Surgery has been taken, the work will be found to contain as full an exposition of the principles of the science as was consistent with its character as a text-book."

Further we learn, with considerable surprise, that—

"As operative surgery requires for its performance a constant reference to the details of regional anatomy, it has been made the subject of a previous treatise, the second edition of which, in two volumes, has now been some time before the profession. To these volumes frequent references are made in the following pages, the two works being intended to form one series on the science and art of surgery."

The necessity for anatomical accompaniments may have been a good reason for making operative surgery the "subject of a previous treatise," but we cannot imagine how such necessity, whether real or not, is to justify the exclusion of operative surgery from either a "text-book" or a "treatise" on the "practice of surgery."

The practical result of this unusual omission can be neither pleasant nor profitable to the students who are obliged to take the "text-book," whether or not their time and means admit of a resort to the bulky and expensive "previous treatise." The *ex post facto* appendix thus provided for, is not, from the nature of the circumstances, available to many under-graduates; so that the arrangement of one book at the expense of the other, may become in a great degree a sacrifice of both.

One more extract from the preface may be offered in behalf of certain of the short-comings which we have to notice.

"In the composition of the present treatise, it has been the author's wish to present each subject as fully as was essential to its comprehension by the youngest of his pupils without entering into such details of the history, pathology, &c., of each as properly belong to monographs. Such an extended treatise on each of the various affections that are daily presented to the attention of the surgeon, would have enlarged this work beyond reasonable limits

and destroyed the object of its formation. Such reading should also be made to occupy the years which ensue upon graduation, and is amply provided for in the works of those who have devoted themselves to special subjects, as in the Treatises on Fractures, Luxations, Diseases of the Breast, Testicle, Hernia, &c., by Sir Astley Cooper; the Affections of the Bones, by Stanley; of the Eye, by Lawrence; of the Ear, by Wilde, &c. But, to all these subjects, sufficient insight is now offered to tempt the student to further investigations when he has mastered the elements of his profession, if the love of knowledge in him, as in others, grows with its cultivation."

The author arranges his material in eighteen separate parts, each of which is divided and subdivided into chapters and sections. Part I. is headed "Surgical Pathology and Therapeutics." It begins with a short "Introduction," which, in order that it may speak for itself, we are tempted to extract entire.

"Surgery (χειρ, the hand, and εργον, work; Chirurgia, Latin—Chirurgie, French) may be defined as that part of the 'healing art' which relates to the characters and treatment of such disorders as are tangible, whether arising from impaired vital action or excited by external causes.

"In explanation of the extended meaning of this term, Mr. Lawrence includes under it: '1. Injuries of all kinds. 2. The greater part of external and local complaints. 3. Such internal affections as produce changes recognizable externally. 4. All disorders requiring external topical treatment, operation, or manual proceedings of any kind.'[1]

"In order to promote the more thorough examination of this wide field, surgical writers have subdivided it into two grand portions; one being known under the general head of 'External or Surgical Pathology;' the other under that of 'Surgical Therapeutics.' Such a methodical division, though highly conducive to study, must not be regarded as being based on any natural arrangement of the disorders to be investigated, few external affections existing independently of the sympathetic action of the internal organs.

"Under the head of External or Surgical Pathology, are usually placed all those laws which are generally recognized as the Principles of Surgery or its Science; whilst the term External, Surgical, or Mechanical Therapeutics, properly expresses the whole Art or Practice of Surgery.

"Surgical therapeutics, as well as surgical pathology, includes, however, many principles which are common to the practice of medicine as well as to that of surgery, whilst the former (surgical therapeutics) embraces not only the internal means of treatment, but also, under a special head (Operative Surgery), such remedial measures as are carried into effect by means of cutting instruments.

"In the arrangement of a work which is intended to be adapted to the wants of the youngest, as well as to those of the more advanced student, I shall, in view of the definition just given, confine myself to such portions of the Science and Art of Surgery as are not included under the last head (Operative Surgery), this having been the special subject of a previous treatise.[2]

"In the methodical division of the present treatise, I will consider, 1st, such portions of surgical pathology and therapeutics as are more or less applicable to surgical disorders in all parts of the body (Parts I., II., III.), then treat of those which affect the different tissues (Parts IV., V.), and subsequently take up the consideration of such as are specially related to certain regions of the body (Parts VI. to XVIII.)." (Pp. 17, 18.)

Little need be said of this first part, except that, notwithstanding its title, it contains no "Therapeutics," being devoted exclusively to "Surgical Seme-

[1] Cooper's Surg. Dict.

[2] A System of Operative Surgery, based upon the practice of surgeons in the United States, with a Bibliographical Index and Historical Record of many of their operations, during a period of 234 years. Second edition, by the Author. Philadelphia, 1855.

iology, or that portion of pathology which teaches the signs or symptoms of surgical disorders." Under this general term it glances at surgical diagnosis, 1st, by means of "signs furnished by the exterior of the body;" 2d, "from an examination of the internal organs;" and ends in the third place with a chapter "Of the Use of the Senses in forming a Diagnosis." Objective and subjective symptoms are strangely mingled together in the first two chapters. The third chapter is sufficiently full, if not disproportionately so, in comparison with the first and second. The fourth section of this chapter, "on the sense of taste" as a means of diagnosis, is evidently an amplification of a shorter paragraph from the great work of Vidal de Cassis, and strikes us as inappropriate in a volume from which so much matter of practical utility appears to have been crowded out.

"Surgical Pathology of the Soft Tissues," is the caption of Part II. It exhibits, in one hundred and eighty pages, a summary view of the "General Characters," "Etiology and Treatment," and "Effects or Products" of inflammation. Of this we may say that, though it is marked by a few obsolete modes of description and notions of histology and morbid processes, the author manages to present a pretty clear and fair idea of the philosophy of the subject as explained by Paget, Bennett, Wharton Jones, and other late authorities. The remainder of this part is occupied, in some seventy-nine pages, with Abscesses (acute and cold); Hectic Fever and Pyemia; Ulceration and Ulcers (including sections on the different kinds of ulcer, on bandaging, on the sequelæ of ulcers, and on skin diseases as connected with ulcers); Mortification in its different forms; Specific Forms of Inflammation (furuncle and carbuncle); Burns; Effects of Cold, and lastly Erysipelas.

Under the general head of "Pathology of Abnormal Growths in the Soft Tissues," Part III. is divided into two chapters, the first of which treats, in about forty-one pages, of "Malignant Deposits or Growths," and the second, in twelve pages, of "Benignant Tumours." Each of these interesting topics receives a comparatively full share of attention. They are well illustrated, and appear to approach tolerably near to the present state of progress in these questions. We should have been glad, however, to find a clearer and more connected account of both the course and the diagnosis of carcinomatous disease. A more precise description of the physical characters of cancer recognizable as far as may be without the microscope, and at least a summary appreciation of the local and constitutional signs, by which the student might be enabled to estimate the respective values of these signs together and apart, would have much increased the practical efficiency of the chapter on malignant growths. Mere drawings and descriptions of microscopical appearances are of little use to the unpractised observer; nor are these microscopical appearances now admitted to be data sufficient of themselves to justify a diagnosis. One of the most invariable and striking characteristics of cancer, the cancer-fluid or "juice," is altogether overlooked by Doctor Smith. We observe also that he makes no distinction between epithelial cancer or epithelioma and carcinoma proper. He describes cancer of the skin as a "true scirrhus," although he afterwards incidentally calls it epithelial cancer.

In connection with the treatment of "cancer of the skin," or rather immediately after the section on this form of the disease, he gives a separate section on the "Treatment of Cancer by Caustics." Some of the formulæ recommended are antiquated and unscientific, while others are hardly deserving of the space they occupy, even as matters of curiosity. We allude to them, however, only to enter a protest against his idea as to the harmless nature of the arsenical nostrums generally employed. He tells us (p. 187) that—

"In the formulæ for these caustics it will be seen that the chief ingredient in nearly all of them is arsenious acid, and at first sight it might be feared that the constitutional effects of arsenic would be induced by such an application. But the general rule that in order to favour the absorption of any substance it must be applied in such a manner as not to create irritation holds good also here, the irritation being so great in the application of these caustics that effusion occurs, not absorption, hence there is no risk of mischief from the poisonous effects of arsenic."

We do not hesitate to say that this is a most dangerous error, and an extraordinary assertion to be made by a professor of surgery. So many undoubted cases of death from the external use of arsenical caustics in cancer are on record that both the "general rule" and its corollary so carelessly announced are altogether untenable and inexcusable. We do not pretend that the "risk of mischief" is great in all cases, but where there is an appreciable surface on which the arsenic is to be applied, the danger is always so imminent that no teacher ought to affirm that the risk does not exist.

Part IV. is devoted to "Injuries of the Soft Tissues." After a few words on the "Process of Repair in the Soft Tissues," he takes up in successive chapters the "general character of wounds," "special wounds," "gunshot wounds," "tetanus," "wounds of the regions of the body." In the first of these chapters we find three sections, which treat respectively of the "healing of wounds," "hemorrhage," and "union of wounds." The chapter on special wounds is made to comprehend, along with the usual array of incised, lacerated, contused and punctured wounds, an account of poisoned wounds, which monopolizes more than twice as much space as that afforded to the every-day accidents and obviously important subjects of the earlier section of the same chapter. Nor can we discover in this section any new views or information to warrant so tedious an episode at the expense of much practical matter which is absent from this portion of the work. The chapter next in order, that on gunshot wounds, occupies ten pages, or one-third fewer than are appropriated to poisoned wounds. It is perhaps sufficiently full, although it bears no impress of any gleaning from the rich experience of the last ten years. In this chapter we meet for the first and only time with any definite allusion to the well-known state of collapse from injury which is generally called the "shock." He dwells upon this as something peculiarly remarkable and worthy of attention in gunshot wounds, although we suspect it is neither more frequent nor more serious than in many other kinds of injury, and certainly not more entitled to attention than it is in compound fractures, injuries of the head, severe contusions, lacerations or burns, in abdominal or thoracic wounds, and in railroad injuries of all kinds.

In the case of gunshot wounds he tells us it "may generally be relieved by very simple measures and more may be done by 'acting on the morale than upon the physique;' the patient should be encouraged as much as possible, and every means employed calculated to raise the spirits. A moderate amount of diffusible stimuli should also be administered, and for this, whiskey and water will answer very well; the symptoms of shock thus being speedily relieved in the majority of cases." (P. 188.)

Passing over tetanus we come to "Wounds of the Regions of the Body," in chapter fifth. This occupies, along with numerous illustrations, some twenty-two pages in seven short sections. For a text-book, especially a treatise, on the practice of surgery, we must say that this whole chapter, although not exceeded in importance of its topics by any in the book, is yet one of the most barren and unsatisfactory. The reader will be continually surprised

and annoyed in it with one defect which is characteristic of the whole book—the unequal amount of space and attention bestowed upon different subjects. Wounds of the scalp, for instance, are not too fully treated of, and yet they are spread over almost as many pages as are allowed to injuries of the brain. Wounds of the face, also, occupy over two pages, while wounds of the chest take up no more, and those of "the neck" not as much, a considerable share of the space in each of these two sections being absorbed by wood-cut engravings of certain handkerchief dressings! We have little time to dwell upon the special deficiencies in the different sections. These are sufficiently glaring to attract the notice of intelligent students, and must inevitably disappoint the inexperienced surgeon who may happen to rely upon the book containing them, "as a work of reference, in the responsibilities of early professional life."

We are told that in cases of suicide, the wound of the throat "is generally made between the os hyoides and the top of the larynx, producing little danger to life," and that such a wound "should be closed by sutures, yet closed so as to leave a free exit for the pus, lest it burrow under the superficial fascia of the neck. If the individual is maniacal, and attempts to tear out the stitches after the wound is dressed, as is not unfrequently the case, he must be controlled by means of a strait-jacket, or by stout assistants." He then alludes to the leather stock, "recommended in these cases with a view of preventing the overlapping of the edges of the wound," but objects to it as not sufficiently controlling the motions of the head, and prefers for this purpose the handkerchief bandage of Mayor, which is figured in full on the next page. "Sometimes," he continues, "wounds are made upon the side of the neck, so as to involve the external or internal jugular vein or the caroid artery, and thus cause serious and fatal hemorrhage. Or the *laryngeal* or other vessels may bleed from being partially divided, until the patient faints, and then the bleeding be arrested." He remembers "tying up *several branches of the laryngeal* in a case of this sort," in which, very much to his surprise, the patient finally recovered. He then reminds us that "in suicidal attempts patients will sometimes commit very trifling injuries upon the neck, which yet will be followed by serious consequences." The occasional effect of wounds and blows upon the back of the head and neck, is next mentioned as producing "sometimes a remarkable train of symptoms, as when the cerebellum is involved, the patient will frequently lose entirely his virile power." We have thus given in the foregoing brief quotations, the sum and substance of the article on injuries of the neck.

That on wounds of the chest is still more meagre and imperfect. We note only the two concluding paragraphs; they are short enough to be quoted at full length. "As a general rule in all wounds of the chest, involving the thoracic viscera, the wound should be *closed* as speedily as possible, and a tight bandage applied so as to compel the patient to breathe by his diaphragm, and thus prevent all motion of the ribs. A wound of the *axilla* or shoulder should have its dressings retained to the part by a handkerchief folded as a cravat, and applied as in Fig. 93." We cannot stop to discuss the propriety of closing thoracic wounds in some cases, and of its bad policy in many others, but we may venture to say that we had hoped in these days of more enlightened practice, that the suffocating system, with the bandage here directed, had been laid aside entirely. The second paragraph embraces all that is said about a most troublesome and dangerous class of injuries.

The remaining three sections, on wounds of the abdomen, intestines, and genito-urinary organs, respectively, are even more remarkable specimens of

professorial teaching. It is not easy to do justice to their peculiarities, except by quoting them in full. We can adopt no fairer mode of dealing with that on "Wounds of the Abdomen," than to present it as it stands, and without comments.

"The danger in *wounds of the abdomen* arises chiefly from their liability to produce peritonitis; and the prognosis, therefore, is always serious. The treatment will be modified by the character and contents of the viscera involved.

"Thus, wounds of the *liver* give rise to very troublesome hemorrhage; but a formidable danger is that resulting from the hepatitis which may be set up. It should be treated upon the same principles as hepatitis uncomplicated by wounds. Should abscesses form, they should be evacuated; but, before this is done, adhesion should be brought about between the peritoneum covering the liver and that lining the abdominal walls, by proper means, such as by cutting down nearly to the peritoneum, and applying nitrate of silver and caustic potash.[1] When the surgeon is sure that adhesion has taken place, the pus may be evacuated without danger of its escaping into the peritoneal sac.

"In wounds of the *stomach*, there will be hemorrhage, depending for its violence upon the position of the wound. Thus, wounds of the greater and lesser curvatures of the stomach will be likely to produce greater hemorrhage than wounds in other parts of its parietes. Wounds of the stomach, when it is full —as after eating—will also be likely to result in the escape of its contents into the cavity of the abdomen.

"In view of these dangers, it might be supposed that these wounds would be necessarily fatal; but, on the contrary, patients very often recover from them; and there is a well-known case on record, in which a man, having had such a wound inflicted upon him, a cobbler, who was in the neighbourhood, went to work with his awl and waxed ends, and deliberately sewed the whole wound together, making the viscus fast to the abdominal walls, and yet the patient recovered. And this course is far from being irrational treatment, as stitching the wounded stomach to the abdominal parietes will diminish the dangers of the escape of gastric juice or other matters into the peritoneal sac. Of course, the patient should be kept upon the lowest possible diet, and be informed of the risks of his wound."[2] (Pp. 308, 309.)

The spirit of the cobbler signalized in the foregoing extract seems to have had some influence on the matter of the succeeding section on "Wounds of the Intestines," for, after the incidental statement that such wounds "may also give rise to trouble by allowing their contents to escape into the peritoneal cavity," the single page which is given to the subject of intestinal injuries is occupied solely with various sutures, "the details of which belong to operative surgery, and are given with plates in the work alluded to"—*i. e.* the author's previous treatise. The descriptions of these sutures are either too inaccurate or too incomplete to be of any use to learners; nor is anything said of their special applications, except that Lembert's "will be found desirable in transverse wounds," and that Ledran's "is particularly applicable to longitudinal wounds of some extent." The puzzled reader is apprised, in conclusion, that, "of course, the selection of any one of these sutures will depend upon the nature of the wound, and the accompanying circumstances. Thus, sometimes we have wounds of the intestines which will be best treated by simply surrounding the whole wound with a single ligature—such, for example, as wounds accidentally made in operations for hernia, or such as result from a mortified spot in an intestine that has been strangulated." The student is then left to work out the problem of intestinal sutures by himself; while, instead of explanations and specifications, however brief, that might have helped to clear

[1] See Op. Surg., vol. ii. p. 78, 2d edit., for other cases.
[2] See Operative Surgery, vol. ii. p. 65.

away the fog, he is presented with a formidable minor surgery picture (Fig. 95), which is much more suggestive of stricture of the urethra than of wounds of the intestines.

The mere explanation of this illustration, as annexed underneath the engraving (see p. 310), requires a greater amount of space than the author has thought it necessary to give to wounds of the kidney and wounds of the bladder, both together. The two sentences in which these serious injuries are dispatched can only be appreciated through a *verbatim* view. They are literally in the following words:—

"In *wounds of the kidney*, inflammatory action is the principal danger to be feared; this, of course, should be combated by appropriate means; but such wounds are generally fatal."

"In *wounds of the bladder*, a catheter should be introduced and retained in position, as shown in Fig. 95, *till* the urine passes readily by the natural channel."

The concluding section rivals its companions in its mode of discussing wounds of the genito-urinary organs.

"Wounds of the generative apparatus vary considerably," we are informed; "sometimes the *penis* has been cut off by the patient himself, or by others." * * * "Sometimes individuals have cut off their *testicles* while labouring under maniacal excitement; and I have known cases where persons confined in prisons, and others, have attempted this with the edge of a broken bottle, &c." * * * "Wounds of the *female* generative apparatus may occur; very extensive laceration of these parts having been produced by falling astride of the stopper of a bath-tub, &c. In such cases, usually, the chief danger is from the inflammation which will ensue; and this should be combated upon general principles. Wounds of the *buttock* and *perineum* are also sometimes created by falls, or, as once occurred, by the breaking of a chamber-pot under the weight of a heavy man. Under these circumstances, the wound should be freed from all particles of foreign matter, and the parts covered by a poultice, &c., as directed in lacerated wounds. The best means of retaining a dressing to this part of the body is by means of the handkerchief bandage of Mayor. One handkerchief, in the form of a cravat, being tied around the pelvis, and the other, in the shape of a triangle, being applied by its base around the thigh, whilst its summit is pinned to the cravat, as shown in Fig. 96."

With the exception of a few words, of little moment, in regard to hemorrhage in amputated penis and in self-castration, we have thus quoted all that is said in relation to injuries of organs and a region which are notoriously liable to accidents, such as ruptures and lacerations of the bladder or urethra, contusions or lacerations of the perineum, and other lesions of the gravest character, ignorance of which, on the part of the surgeon, might involve his patient and himself in the very worst consequences.

Injuries and diseases of the bones and joints come next in order. They appear, naturally enough, to have received a much larger share of attention than have the affections of the soft parts. The first chapter of this part furnishes, in addition to the other usual generalities, some detailed information in regard to the handling of the patient, and the preparation of fracture-beds, which is useful and interesting, notwithstanding its apparent triviality. We have no serious objection, in a text-book, to really practical instruction of this kind—even to the extent of many pages. It will doubtless prove more acceptable, as well as more immediately available, than much of text and illustration that now occupy no less valuable space. Our only regret is, in reference to this and other similar portions of the volume, that many higher and more important precepts, both of the science and the art, have not been elaborated in an equally familiar manner. Two or three pages upon the duties which concern rather

the nurse than surgeon although too often devolving on the latter, may hence be neither inappropriate nor detrimental to the proper objects of the work; but they do not in any degree compensate for such condensations as that, for instance, of the diagnosis, prognosis and treatment of fractures of the cranium within little over a single page! No one, we suspect, could learn, from the extremely slight sketch of the latter vitally important questions submitted by our author, how to recognize a fracture of the cranium in its true nature and extent, or what to do for it when recognized.

We have neither time nor inclination to follow Dr. Smith in many of his propositions in the introductory and other portions of this part on fractures and luxations, although, as he evidently feels at home, the *individualities* are correspondingly numerous and striking. We cannot, however, leave his chapter on "Fractures in General" without adverting, for a moment, to the admonition volunteered to Mr. Paget, as the apostle of the established school of surgical pathology, in respect to "provisional" or "ensheathing" callus. The latter designation is graciously approved as preferable to the former, but the venerable doctrine of our author's student days is not to be lightly laid aside, and he insists upon the two forms of definitive and provisional bony union, of Dupuytren, as "yet recognized to a considerable extent" by surgeons, the researches and the testimony of the best surgical minds of the age to the contrary notwithstanding! The manner in which, at the present stage of the investigation, he hazards the unsustained assertion that "personal observation induces me to think that Mr. Paget's first opinion on this point will not be maintained by him on further and more extended observation" is not likely to advance his own reputation for scientific accuracy or judgment.

In regard to fractures of the ribs, nothing is said of the frequent intolerance of the bandage around the chest, which every surgeon who applies it must, from time to time, encounter and submit to in the course of practice; nor is any mention made of the efficient and comfortable dressing of adhesive strips applied only upon the affected side, which has, in many hands, of late years nearly superseded the old fashioned circular constriction.

The prognosis of fracture of the clavicle, he tells us, "is generally favourable, if proper means are employed to keep the fragments in position, and perfect cures, without deformity of the level of the shoulders, can generally be obtained by proper attention. Such results have been so frequently noticed as to leave no doubt on this point in the minds of many, though sometimes such good cures have not been made." (P. 357.) This is too vague a proposition to be worthy of note in a scientific treatise; but as it is an expression of opinion addressed especially to students and inexperienced practitioners, we must suppose that he means his pupils to understand that they are to promise and to expect, by obeying his directions, to obtain, under ordinary circumstances, what he subsequently describes as "not only perfect union of the fragments, but union without angularity or any deformity." In this assertion he is in direct contradiction with many surgeons of great experience and high authority. Among these no one commands the confidence of the profession more decidedly and deservedly than Professor Frank H. Hamilton, of Buffalo, New York, whose valuable report "On Deformities after Fractures," published in Vol. VIII. of the *Transactions* of the American Medical Association, contains the fullest and most incontrovertible array of tabulated and specified cases hitherto recorded in relation to this question. Yet Dr. Smith makes not the slightest allusion, except by implication, to this standard document, and ignores alike the laborious researches and the positive results of its able and indefatigable author, as well as the repeatedly ex-

pressed experience of some of the most enlightened and skilful surgeons of the world! We doubt not that, under our author's skilful management, and that of the hospital surgeons of Philadelphia, as fair an average of cures has been attained as need be hoped for; still we have reason to suspect that here, as elsewhere, the exceptions have been quite numerous enough to afford a positive refutation to the merely negative dictum so confidently reannounced.

Speaking of the treatment of fractures of the patella, he eulogizes the splint employed by Dorsey, and expresses his belief that "there is perhaps only one mode by which the fracture can be kept more thoroughly in position, and that is the plan of Malgaigne." This latter surgeon is described as hooking "two little iron clamps into the fragments," which are then approximated by means of a screw, and in this way succeed generally in effecting osseous union. Dr. Smith naturally enough objects to this apparatus as probably painful and irritating. We allude to it only for the purpose of remarking that Malgaigne's practice is to introduce the points of his instrument into the tendon above and below the respective fragments, and that in his hands there cannot be any penetration of the bone or wounding of the joint.

Our author further informs his readers that "very good cures have also been accomplished in these cases by the use of strips of sticking plaster, a dressing which was many years since considered applicable to compound fractures, or to fractures combined with wounds in the region of the knee, as it at the same time served as a dressing to the fracture and as a means of closing the wound." He then describes the application of a succession of long strips embracing the joint obliquely in two sets, so as to draw upwards and downwards on the respective fragments, and overlapping each other so as to envelop the entire joint. This dressing is combined with the ordinary spiral bandage of the whole limb, and a posterior splint or the single inclined plane. It is an injuriously constricting, and, on many accounts, objectionable application of the plaster—especially in case of wounds or compound fractures—and altogether unlike the efficient and simple arrangement recommended by Dr. Neill. Our author evidently does not understand the latter, for he concludes a tedious series of directions for the complicated wrapping of adhesive strips, above briefly described, by erroneously stating, that "in the Pennsylvania Hospital of Philadelphia, it has been frequently applied to simple fracture with satisfactory results—attention having been called to it by Dr. John Neill." (P. 425.)

Many other questionable passages in the part on fractures, before as well as after the above, occur to us as equally open to exception; but we gladly pass them over, and stop for a moment at the final section only: that on "pseudarthrosis or ununited fracture."

At the close of an incomplete and very brief enumeration of the modes of local treatment practised for the removal of different forms of this infirmity—constitutional adjuvants and some of the best local measures being wholly unnoticed—he mentions the expedient of Dieffenbach, "who drilled holes in the extremity of the bones, and, inserting little pegs of ivory, kept them there until such an amount of inflammation was produced as resulted in union." He then informs us that "Dr. Brainard, of Chicago, has also proposed to drill a number of holes in the end of the bone with an awl, with the same view." Next we are told, by way of a practical estimate, that "in order to make use of any of these modes of treatment, it becomes necessary that the patient should, for a long time, retain the recumbent position; whilst he is exposed to the risks of the creation of a compound fracture, in which suppuration may take place," and more words to the same effect. We need not take the

time to show how little these objections can apply to some of the best established preliminary methods, which he has obscurely represented and jumbled up with vastly more difficult and dangerous procedures. This cavalier mode of slurring over the ingenious and comparatively simple subcutaneous operation of his countryman, Dr. Brainard, is especially unfortunate in a text-book addressed to American students. It is hard to conceive how any teacher of surgery in this country could mistake a tested improvement, which was the subject of a prize essay in so recent a volume as the seventh of the *Transactions* of the American Medical Association, for a mere proposition in imitation of the more serious and very different, although admirable, operation of the Prussian master. The most hasty examination of that prize essay and of its excellent illustrations would have convinced him, not only of the dissimilarity of the two operations, but of the success which had attended the performance of the Dr. Brainard's method in at least seven cases.

This number of cases happens to be just the same as Dr. Smith himself brings forward in favour of a plan and a contrivance which he seems to cherish as the creature of his own invention, and for the sake of which he is inclined to sweep away all other kinds of treatment.

"With a view of avoiding these dangers," he remarks in reference to the objections already cited, "I some time since called the attention of the profession (*Am. Journ. Med. Sci.*, vol. xxiv., N. S., p. 102, Jan., 1855) to an apparatus consisting of an artificial limb (Figs. 169, 170), which formed a complete casing for the affected member, and by means of which union was hastened, and a tolerable amount of usefulness at once obtained in any limb affected with false-joint." The paper here alluded to was extracted from the *American Journal*, and extensively circulated as "A New Plan for treating Ununited Fractures," and is so announced in the report on medical literature in the American *Transactions* for 1856.

We suspect that few surgeons of any standing in the last half century have not been more or less familiar with this *new* plan, in all its essential features, as one of the most obvious and the earliest of the preludes to more decided remedies. We shall not dwell upon the particular stage and form of lesion, including constitutional defects, which alone have been regarded as amenable to the combination of pressure with due retention of the fragments and regulated exercise descanted on by Dr. Smith. We must, however, be allowed to say that *Cooper's Surgical Dictionary* or *Velpeau's Operative Medicine*, without reference to more original authorities, might have satisfied him that the principles and practice of his favourite treatment date back almost, if not quite, a hundred years; and that, ever since the time of White, in 1760, they have been applied and recommended in various ways, but ever with discriminating adaptation to the nature of the case, by the most eminent surgeons of the day.

We are pleased to find that he does due honor to the *flexion method* of reducing certain dislocations of the femur, introduced by Dr. Reid; and that in drawing a very favourable contrast between it and the ordinary process, he does not forget to award the merit of at least restoring and systematizing the invention, to its American author. Some notice of the observations of Dr. Markoe, of the New York Hospital, as to the danger in certain cases of producing fracture and other mischief in the manœuvres practised with Reid's operation, and the precautions consequently enjoined, would have been an important addition to the lesson on this interesting subject.

The concluding chapter of Part Sixth treats, in four sections, of diseases of the joints, and includes under this head "sprains," "arthritis or white

swelling," "anchylosis" and "morbus coxarius." Of these topics, sprains and morbus coxarius enjoy the lion's share of space. We regret to see that the section on the latter, which is otherwise a useful summary, is burdened with an unnecessary attack upon the views of Dr. March, of Albany, "advanced" in the American *Transactions* (Vol. VI.), as to the rarity of "spontaneous dislocation of the hip as purely the result of morbid action unaided by superadded violence." Although he tells us that "this distinguished surgeon" arrived at his conclusion "after taking considerable trouble in investigating the subject, and even visiting Europe," he nevertheless imagines that the "correctness" of the conclusion of Dr. March, thus laboriously sought and reached, "can be best disproved by an examination of the specimens, from some of which the accompanying cuts are taken (Figs. 208, 209, 210, and 211)!" (P. 554.) "Various preparations," he subsequently says, "exhibiting the frequency of this luxation of the femur as a result of hip disease, are in my cabinet, as well as elsewhere, and show that there are many facts to militate against Dr. March's opinion." It is not our purpose to take either side in this debate, but we must wait for stronger evidence than the dictum just announced, even though accompanied with its vouchers in the shape of the four diminutive and not very graphic wood-cuts of cleaned and dried cabinet specimens, before we yield our confidence in the more definite experience of the Albany professor.

"Affections of the Eyeball and its Appendages," "Diseases of the Ear," "Affections of the Nose and its Cavities," "Affections of the Throat and Neck," come next in order, and are rapidly disposed of in four parts and some seventy-seven pages. These are followed by Part XII., on "Hernia," in fifteen pages; Part XIII., on "Diseases of the Genital Organs" (in a strangely confused and unequal series of sections on venereal diseases and their sequelæ, together with a whole chapter on Spermatorrhœa); Part XIV., on "Stone and Gravel," in eleven pages and a half; Part XV., on "Affections of the Testicle and Cord" (hydrocele, hæmatocele, varicocele, and spermatocele, in nearly eight pages, and tubercles of the testis in over ten pages, most of these latter being a mere reprint from an article published sixteen years ago); Part XVI., on "Affections of the Anus and Rectum," in nineteen pages; Part XVII., on "Aneurism," in twenty pages (of which about ten lines are devoted to aneurismal varix, about seven lines, with an illustration, to varicose aneurism, and twelve lines to aneurism by anastomosis); and Part XVIII., on "Affections of the Extremities," including paronychia, enlarged bursæ, varicose veins, and club-foot.

We confine ourselves to the above hurried outline of the contents of the last eight parts, not that they are less interesting in their topics, or that there is not something to commend and much to criticize; but because the reader, whose patience and perseverance have carried him thus far in following our review, must be as weary of his labour as we are of ours, and deserves a release from further durance with the least possible delay.

The task of the critic was never more irksome and unpalatable to us than on the present occasion; while, for obvious reasons, it could rarely be more imperative. In scrutinizing the claims of the work of Dr. Smith upon the confidence of preceptors, pupils, and practitioners as a systematic guide book, we have felt bound rather to dwell upon its bad points than its good ones; since the latter, by the mischief they may do or the good they leave undone, can neither be counterbalanced nor counteracted by any healing virtue in the former. Whether a work emanating from the oldest medical seminary in the country—with one exception still the largest in the numbers of its classes—

is to be indorsed and recommended as a comprehensive and reliable instructor, while tainted with the frivolities and disabilities—not to say heresies—which have here been briefly pointed out, our readers may determine for themselves. We have endeavoured to discharge a most unpleasant duty towards the scientific bearing of his work, and, were it proper, should willingly leave our author without comment on its literary aspect.

Much less, perhaps, may be expected of this kind of merit in a practical or scientific treatise addressed to experts; but in a text-book prepared especially for learners, accuracy, perspicuity, and a certain amount of elegance and force of style, are indispensable requisites. Unfortunately, the lack of each of these qualities is sufficiently apparent in the extracts already submitted to our readers. Confusion of language as well as of ideas, awkward phraseology and general absence of precision in descriptions and directions, are more or less prominent characteristics of every chapter in the book. Another serious blemish which is particularly reprehensible in a class-book, is an unusually careless habit of misspelling and misquoting familiar proper names. Thus Heister and Miller are both quoted as "of England;" and Hennen, Hind, Macartney, and Desault are invariably written Henen, Hines, McCartney, and Dessault! The stereotyped excuse of press of other occupation, offered in the preface, affords no adequate apology for errors of this kind. Want of time and opportunity to make a better one may readily account for the defects of any ill-digested specimen of authorship; it is one of the worst of reasons for imposing such abortion on the public—above all for purposes of teaching, and with the indorsement of a professor.

The duty of the publishers has been, as usual, well performed. The book is printed on good paper; and the illustrations, although often inappropriately and inconveniently large, are generally sufficiently well engraved.

ART. XVIII.—*An Exposition of the Signs and Symptoms of Pregnancy, with some other papers on subjects connected with Midwifery.* By W. F. MONTGOMERY, A. M., M. D., &c. &c. Second edition. London, 1856.

THE present edition of Dr. Montgomery's classical monograph is somewhat enlarged, and has undergone, as the author informs us, so thorough a revision that it may almost be regarded as a new work. A sufficient quantity of material has certainly accumulated since 1837, the date of the previous edition, to supply many additional facts of importance to a work intended to represent the actual state of our knowledge on the subject of which it treats. The portions of the work which have been more particularly enlarged are the preliminary chapter on the state of the female system during pregnancy, that devoted to obstetric auscultation, to the diagnosis of spurious or simulated pregnancy, the normal duration of human gestation, the examination of the body after death for the purpose of detecting pregnancy, and the essay on the spontaneous amputation of the fœtal limbs in utero.

The first chapter, devoted to "General Observations on the State of the Female System during Pregnancy," is introduced for the purpose of enabling the reader to appreciate more fully the description of the individual signs of pregnancy subsequently given. It is in this chapter that Dr. Montgomery

touches upon the very interesting question how far mental and moral impressions made upon the mother during pregnancy can induce injuries or deformities of the fœtus. The popular notion that the influence upon the child of such mental and moral impressions is very great, though altogether disregarded by some physicians as unfounded, is, we think, admitted by the best authorities at the present day as having a great deal of evidence in its support. The facts upon which it is based, though often exaggerated and distorted by the popular love of the marvellous, and though sometimes apparently quite inexplicable on ordinary physiological principles, do nevertheless certainly exist. Dr. Montgomery quotes several instances of this sort from other authorities, and gives the details of two which came under his own observation. In one of them the lady, while pregnant, objected to walking out for exercise as she was advised, for fear of meeting a cripple with deformed feet whose appearance was exceedingly repulsive to her, and who haunted that portion of the town through which she was most likely to walk; and when she was delivered, her child, which was premature, was found to have a precisely similar malformation. In the other instance, a corresponding deformity of the hand was predicted by the mother, and attributed to her having seen the same thing accidentally in another infant when she had been but a short time pregnant.

It seems probable, in fact, that in every case where the organization of the child is seriously affected through the sensibilities of the mother, the impression must be made during the early periods of pregnancy. At that time, while the organs are in process of formation, while even the spinal column and the limbs are still imperfect, there is no difficulty in understanding how a severe shock to the nervous system of the mother should disturb or altogether arrest the development of any part of the fœtus. If trifling mental and moral qualities, belonging to the mother, may be transmitted, as we know they are, to the infant, only to reappear, perhaps, after many years of growth and development, we certainly cannot deny the possibility of powerful nervous shocks exerting a direct influence on the fœtus through its bodily organization. Even at a comparatively late period of pregnancy certain deformities, such as spina bifida, hare-lip, club-foot, &c., which are purely owing to a retarded or arrested development, may, without doubt, be produced in a similar way. The extravagances of the popular notion in this respect consist principally in fancied resemblances between the object which excited the alarm or disgust of the mother, and the mark which is afterwards found on the body of the child. A case once occurred under our own observation in which the child was born with a deficiency of the cranial cavity and bones, and in which the brain protruded as a soft, rounded, reddish mass on the top of the head (exancephale). The deformity was attributed, by the woman's friends, to her having been struck by a ball thrown by a boy in play some time during her pregnancy; and the protruding brain of the deformed fœtus was averred to be "the very ball" by which the mother had been injured. To the same category we must refer stories of children being born with the snout of a pig, or masses discharged from the uterus resembling a tortoise or other reptile, on account of the mother having been previously frightened or shocked by the sight of these animals; and though such resemblances are usually altogether fanciful, there can yet be no doubt that the shock produced by a disagreeable sight in a sensitive female may affect so profoundly the uterus and its contents as to produce serious deformity in the embryo.

There is no necessity for supposing any mysterious or very unusual mode of action in either the nervous or vascular systems in order to account for such

an effect. We know very well how nervous impressions will disturb the circulation in the brain, the face, the lungs, &c.; and the uterine circulation is quite as easily influenced by similar causes, as we see every day in cases of amenorrhœa, dysmenorrhœa, &c. If a nervous shock may excite premature contraction in the muscular fibres of the pregnant uterus and produce abortion, it is certainly capable of disturbing the course of the circulation through the bloodvessels of the organ. But the fœtal circulation is dependent, to a great degree, on the maternal. Since the two sets of vessels are so closely entwined in the placenta, and since the fœtal blood has here much the same relation to the maternal that the blood in the pulmonary capillaries has to the air in the air-vesicles, it will be liable to derangement from similar causes. If the circulation of air through the pulmonary tubes and vesicles is suspended, that of the blood through the capillaries comes to an end also. In the same way, whatever disturbs or arrests the circulation through the vessels of the mother must necessarily be liable to interfere with that in the fœtal capillaries forming part of the placenta. And lastly, as the nutrition of the fœtus is provided for wholly by the placenta, it will, of course, suffer immediately from any such disturbance of the placental circulation. The effect of this may be manifested in the general atrophy and death of the fœtus; or, if the disturbing cause be slight, in the atrophy, or imperfect development of particular parts; just as, in the adult, a morbid cause operating through the entire system, may be first or even exclusively manifested in some particular organ which is more sensitive to its influence than the others. It is easy to see, therefore, that there is nothing inexplicable in the general fact that moral impressions acting on the mother may produce alterations, either local or general, in the fœtus; though there may be a difficulty of explaining the exact mode of operation in particular cases.

Another, and much more singular fact, is discussed in the same chapter with the above, viz: that the fœtus may exert a reciprocal influence upon the mother, so that some of the peculiarities of organization belonging to the male parent may be communicated, not only to the fœtus, but through the fœtus to the mother, by means of the placental circulation; and again by the mother transmitted to subsequent offspring by another male. He cites as examples the well-known instances of the Earl of Morton's Arabian mare, which was covered by the quagga, when not only did "the mule so begotten partake of the characters of the sire, but when the mare was subsequently submitted to an Arabian stallion, by whom she had three foals at different times, the first two continued to exhibit some of the distinctive peculiarities of the quagga, conjoined with the characters of the Arabian breed;" and, as another example, the "litter of pigs" mentioned by Mr. Mayo, which "resembled in colour a former litter by a wild boar."

It is undoubtedly in this way, if at all, that constitutional syphilis is communicated by the male to the female. The taint is communicated, of course, to the ovum; and when the fœtus, in the process of development, becomes connected with the uterine walls by a placenta, it may transmit to the blood of the mother the constitutional taint which it derived from the father. It is for this reason, apparently, that secondary syphilis cannot be communicated to the female by simple coition, but yet may be so communicated, provided coition is followed by conception. Whatever the true explanation may be, however, the author vouches for the frequent occurrence of the fact.

In the second chapter there is given a very useful classification of the several sources from which the signs and symptoms of pregnancy are to be drawn,

and the various considerations by which we are to be guided in their application. These different sources of diagnosis are—

First. "Certain affections of the constitution, induced by pregnancy;" such as suppression of the menses, nervous irritability, capriciousness of temper, erratic pains, dropsical effusions, &c.

Second. Sympathies excited in other organs "in consequence of the irritation induced in the uterus;" such as the changes taking place in the mammary gland, the areola, vomiting, salivation, &c.

Third. "The altered condition of the uterus itself," including its enlargement and rise into the abdomen, with the effacement and protrusion of the umbilicus, the alterations of the cervix uteri, the purple colour of the vagina, &c.

Fourth. "The contents of the uterus so enlarged," and the signs derived directly therefrom; as the movements of the fœtus, its repercussion or *ballottement*, the sounds of the fœtal heart, and the placental souffle.

Fifth. "Certain organized substances" which may be discharged from the uterus and subjected afterward to examination, such as moles, hydatids, membranes, &c., which may settle the question of pregnancy by being recognized as the products of conception—and,

Sixth. A *post-mortem* examination of the uterus and its appendages, which may be undertaken with a view to decide the question of pregnancy, either before or at various intervals after delivery has taken place.

"Now, it is quite obvious," says Dr. Montgomery, "that of the signs thus enumerated, some are of a kind much more decisive than others, and in this respect, I think we may very conveniently divide them into three classes; considering the first and second groups as *Presumptive*, the third as *Probable*, and the fourth, fifth, and sixth as *Unequivocal*. Many of the sympathies included in the first class are not necessarily the result of pregnancy only, as their specific cause, but may arise equally from the uterine irritation, which is common to that and other conditions of the female system, and hence one great source of deception and error; while, on the other hand, conception is, occasionally, productive of so little disturbance or alteration in the exercise of the several functions usually affected, that one of our principal guides in forming an opinion is unavailable. And again, conception sometimes occurs when the system has been already in a state of disease, which, by the derangement previously produced, will prevent the possibility of judging from the absence or presence of those indications to which we refer in ordinary cases, as happened in the instance of E. G., to be related hereafter, who was labouring under disease of the heart, and had the catamenia suppressed two whole years, when she conceived."

The value of the above signs, moreover, is to be estimated according to certain considerations which are essential to a correct diagnosis. These considerations are as follows:—

"1st. The interval at which they have appeared, after the supposed time of conception.
2d. The order, or succession, in which they have presented themselves.
3d. Their value, as certain and unequivocal, or as uncertain and equivocal.
4th. Their correspondence with each other.
5th. The length of time they may have been in existence."

It is evident that the interval which elapses after the supposed time of conception, as well as the order in which the symptoms appear, may make a vast difference in their value and signification; as, for example, where the enlargement of the abdomen is perceptible in less than a month, or, on the other hand, does not show itself till seven or eight months have elapsed. In

each instance the symptom loses its significance, so far as pregnancy is concerned, in consequence of appearing either too early or too late. And again—suppressed menstruation, morning sickness, mammary development, and enlargement of the abdomen, occurring successively, point very strongly to pregnancy; but if their order be reversed, the enlargement of the abdomen appearing first, and the suppression of the menses last, they are in all probability dependent on some other cause.

The diagnosis of pregnancy is nearly always to be made up, especially during the first half of the period, by the collation of many separate signs, any one of which may be equivocal if taken by itself; but all of which, when simultaneously present and corresponding with each other, may amount to almost positive certainty.

There are, as the author remarks, only three phenomena that can be called, by themselves, certain or unequivocal symptoms of pregnancy. These are—

First. Active movements of the child, unequivocally felt by another;
Second. Its presence in utero, ascertained by ballottement; and
Third. The pulsations of the fœtal heart.

"If any one of these be ascertained," he says, "beyond doubt, it settles the question; but then, we must remember, that they are decisive only on the positive, or affirmative side; if certainly recognized, pregnancy is indisputably proved, but their absence, or rather our not being able to discover them, would be no proof that pregnancy did not exist."

In speaking of suppression of the menses as an element in our diagnosis, the author mentions various instances to show that it is not, by any means, a positive sign of pregnancy. For not only may suppression be owing to other causes than pregnancy; but even an habitual amenorrhœa does not necessarily prevent conception taking place, provided the woman be otherwise healthy. In one instance which fell under the author's own observation, the lady was pregnant for the fourth time, and yet had never menstruated since her first confinement, five years previously. In another case, the patient had had six children in nine years, and yet had never once menstruated during the whole of that period. Such cases as these, many of which have been noticed by other observers, show that a periodical discharge of blood is certainly not necessary to fecundity. For, properly speaking, this discharge does not constitute the essential part of the menstrual process, but is rather an external symptom of the more important changes taking place in the ovary. And if the ovum come to maturity and be discharged from the ovary, it may, of course, be fecundated and developed, though its usual accompaniment of an external flow may be wanting.

The opposite condition, in which the menses continue during the early part of pregnancy, is probably somewhat more rare. The author speaks of several instances within his knowledge in which menstruation recurred once after conception, and quotes other authorities to show that it may show itself more than once, and has even been known to return, at its ordinary intervals, during the entire period of gestation. It appears from these instances that menstrual suppression, though the first symptom of pregnancy, is, taken by itself, one of the least positive, and may mislead us in either direction, if we rely upon it exclusively. Nausea and vomiting, salivation, the enlargement and increased sensibility of the mammæ, are also shown to be valuable as signs of pregnancy only when taken in connection with other symptoms, and in the absence of any other obvious exciting cause.

The condition of the *mammary areola* in pregnancy is a sign which has

been so thoroughly studied and described by Dr. Montgomery, that it may almost be regarded as a discovery of his. The elegant series of coloured engravings which accompany the present work, showing the progressive development of the areola in the third, fifth, seventh, and ninth months, were taken from the second pregnancy of the same patient that furnished a similar series for the first edition; and beside them the author has given a drawing of the areola of an albino in the seventh month of her first pregnancy, in which all the usual characters of the areola are present, except that its colour is of a clear pink instead of the brown tinge which is seen in females of the ordinary complexion. The colour alone is not in any case, according to Dr. M., to be regarded as decisively characteristic; the more peculiar and reliable changes being the tumefaction and unusual moisture of the skin, the development of the mucous follicles about the nipple, and more particularly a peculiar *mottled* or *spotted* appearance, which seems to be regarded by the author as the most decisive of all. His description of these signs is so graphic and lucid, that we cannot do better than to transcribe a part of it.

"In the centre of the coloured circle," he says, "the nipple is observed, partaking of the altered colour of the part, and appearing turgid and prominent, its apex being, more or less, covered with little branny scales, produced by the drying of a sero-lactescent fluid which oozes from the part, and a drop or two of which may, in general, be pressed out by the fingers; while the surface of the areola, especially that part of it which lies more immediately around the base of the nipple, is studded over and rendered unequal by the prominence of the glandular follicles, which, varying in number from twelve to twenty, project, from the sixteenth to the eighth of an inch; and, lastly, the integument covering the part appears a little raised, turgescent, softer, and more moist than that which surrounds it, while on both, there are to be observed at this period, especially in women of dark hair and eyes. numerous round spots, or small mottled patches of a whitish colour, scattered over the outer part of the areola, and for about an inch or more all round, presenting an appearance, as if the colour had been discharged by a shower of drops falling on the part. Dubois, referring to this appearance, as described by me, and often noticed by himself, applies to it the designation of secondary areola. I have not seen this appearance earlier than the fifth month; but, towards the end of pregnancy, it is very remarkable, and constitutes a strikingly distinctive character, *exclusively resulting from pregnancy:* the breasts themselves are, at the same time, generally full and firm, at least more so than was natural to the person previously, though to this I shall have occasion to notice exceptions; and venous trunks of considerable size are perceived ramifying over their surface, and sending branches towards the disk of the areola, which several of them traverse: along with these vessels, the breasts not unfrequently exhibit, about the fifth or sixth month, and afterwards, a number of shining, whitish, almost silvery lines, like cracks; these are most perceptible in women who, having had before conception very little mammary development, have the breasts much and quickly enlarged after becoming pregnant."

Like many other signs of pregnancy, however, the areola, though very distinctive when it exists, is not equally valuable as a negative sign; since, owing to imperfect development or a want of sensibility in the mammæ, it may be slightly marked, or altogether absent, though conception have taken place and pregnancy be even considerably advanced. Another important circumstance, too, is to be considered in examining the breasts for this purpose; viz., that the deepened colour of the areola, as well as the "whitish, silvery lines," already spoken of, may remain more or less distinctly marked after delivery, and may even become permanent; so that they may be really the signs, not of a present, but of a previous pregnancy. These peculiarities, however, should not be regarded as diminishing the value of the symptom,

but only as requiring that judgment in their observation and application which is so necessary to the medical man in every species of diagnosis.

The *dusky hue of the vagina*, first proposed as a test of pregnancy by Professor Kluge of Berlin, and by M. Jacquemin, of Paris, is spoken of at some length. In the previous edition of Dr. M.'s book he did not express any decided opinion as to the value of this sign, owing to the rare opportunities presented in English practice for making an ocular vaginal examination, unless in cases where some morbid condition of the parts is known or suspected to exist. Since then, however, he has had, as he says, very ample means of observation on this point; and the results of his more extended experience lead him to regard the vaginal discoloration as a very valuable diagnostic mark. He states, indeed, that "in every instance, without a single exception, in which he found this appearance distinctly marked, pregnancy coexisted." One remarkable instance, illustrative of its value, is mentioned at page 245, in which the colour was "unusually well marked at the fourth month, but at six months had entirely disappeared; the ovum having been in the mean time blighted."

Among the accidental conditions accompanying pregnancy, and more or less characteristic of it, are mentioned alterations in the temper, imagination, or even in the judgment; an unnatural, excessive, or depraved appetite, and those singular caprices sometimes observed, which are termed by the common people "longings." The vulgar notion with regard to these longings is that they must be gratified; and that if they are not, some harm will be likely to follow either to the mother or child, or both. Dr. M., however, regards them as more liable to do injury when freely indulged, than when restrained within moderate limits. It seems, indeed, no more than reasonable to believe, that such unnatural practices as eating freely of chalk, cloves, cinders, bog-wood, &c., should have an injurious tendency during gestation, as they certainly would in the unimpregnated condition. Still, it appears to us as straining probabilities too much to regard the injury to the child, in every instance, as directly dependent on the capricious habits of the mother; as, for instance, where a fungus hæmatodes in the infant (page 281) is attributed, by implication, to the mother having been in the habit of eating brown paper. The capricious appetite is more probably only one symptom of that morbid internal condition of the female system, of which the disease of the fœtus is also a consequence.

With regard to that peculiar ingredient of the urine termed *kyestein*, of which so much was said at one time, Dr. Montgomery adds his testimony to that of most others who have examined the matter with care, and comes to the conclusion that its presence or absence is quite unreliable as a test of pregnancy.

"In some of the specimens of urine," he says (page 305), "from cases of undoubted pregnancy, the peculiar changes did not manifest themselves: in other cases, where pregnancy did not exist, appearances were observed so like those supposed to indicate that state, that I confess I could not discriminate between them."

The pellicle which forms, in some instances, on the urine of pregnant women, and which was supposed to be characteristic of their condition, does not, indeed, contain any peculiar animal substances beyond those produced by the decomposition of the mucous ingredients, which are always present in larger or smaller quantity. It consists, as is now very generally acknowledged, only of abundant crystals of the triple phosphate, entangled in a mass of confervoid growths and vibriones. The phosphatic crystals owe their formation

to the rapid alkaline fermentation of the urine; and the confervæ and vibriones find a ready growth in the decomposing animal substances of the secretion. Any urine, therefore, which easily undergoes the alkaline fermentation, and which contains, at the same time, rather more mucous or other albuminoid ingredients than usual, may present the kyestein-pellicle, and evolve beside, as we have also had occasion to observe, a more or less distinctly marked cheesy odour. This appearance must, therefore, we think, be abandoned as an indication of pregnancy.

In the thirteenth chapter, the characters of the *corpus luteum*, as a mark of pregnancy, are described at greater length than in the former edition. The author recognizes fully the existence of two kinds of corpora lutea; those, viz., which are the effect of ordinary menstruation, and those which result from the establishment of pregnancy. The difference between them, now we believe universally acknowledged, is given in a series of statements, one of which indeed comprises, in a condensed form, but in general terms, the entire distinction between the two kinds of bodies.

"The corpus luteum of menstruation," he says (page 487), "within one or two months passes rapidly into a state of atrophy and decay; whereas that of pregnancy continues to be developed, and to acquire greater firmness and more perfect organization, during more than the first half of the period of gestation."

The author regards, therefore, the corpus luteum which results from pregnancy as having entirely peculiar and distinctive characters; and as furnishing, by its presence or absence, a positive means of diagnosis. We presume that this fact is now so generally acknowledged as hardly to be disputed by any one; though at the period of the first edition of the *Signs and Symptoms of Pregnancy*, authorities were very nearly equally divided on that point. There are one or two minor particulars, however, in which Dr. Montgomery is at variance, we should judge, with the majority of observers at the present time. The greater number of physiologists and obstetricians, on the Continent, at least, regard the rupture of a Graafian vesicle, with the discharge of an ovum and the subsequent formation of a corpus luteum, as so many constant, regular, and integral parts of the process of menstruation; so that there are to be found, except in cases of disease, only two different kinds of yellow bodies in the ovary, viz: those of menstruation and those of pregnancy; the differences between them being wholly owing to the difference in the rapidity of their development and subsequent atrophy. Dr. Montgomery, however, does not allow this to its full extent. Like some other English writers, he thinks the Graafian vesicle becomes regularly tumefied at each menstrual period, and in many instances is ruptured and discharges the egg; but that the process is not constant, and is "by no means always" followed by the formation of a corpus luteum.

"If corpora lutea were formed," he says (page 479), "at every menstrual period, we could not open the ovary of any healthy young woman in the habit of menstruating regularly without discovering more than one, perhaps several, of these structures, a thing which everybody knows does not happen. That such changes in the ovary do, almost constantly, accompany the periods of heat, or œstruation in the lower animals, giving rise to the formation of corpora lutea of considerable size and perfection of structure, is proved by numerous observations, of the accuracy of which we cannot doubt; but with regard to women, it is otherwise, and any such assertion can only be made of them with far greater limitations; for in them, owing probably to the less intense excitement of the generative apparatus, the ovum is oftentimes not extruded at the menstrual period, and the corpus luteum may not be produced at all; or if

formed, is less substantial; and here I would deprecate a course too often pursued in matters such as we are now considering, namely, that of applying unreservedly to the human female, analogies drawn from facts ascertained in the lower animals."

We cannot but think, notwithstanding the doubts expressed by the author, that the evidence of the constant formation of corpora lutea at the menstrual epoch is now quite satisfactory. It cannot be denied, as Dr. Montgomery himself says, that it takes place always in the lower animals; and though, as he very justly remarks, it is quite improper to apply physiological analogies drawn from the lower animals to the human species in an unreserved manner, still, there are instances in which the resemblance may be so close in all essential points as to establish at least *probabilities* of the strongest kind. That seems to us to be the case here. At every return of the period of heat or œstruation in the lower animals, together with the congestion, swelling, increased secretion, and more or less abundant hemorrhage which takes place in the uterus and adjacent parts, we know that a Graafian vesicle ruptures and a corpus luteum forms in the ovary. In the human female, the menstrual period *is* the period of œstruation; and, as the rupture of the vesicle is the essential part of this process in the lower animals, to which the uterine congestion, hypersecretion, and hemorrhage are only accessories, we certainly have, so far, *prima facie* evidence that it takes place also in the human female at menstruation. There is plenty of direct evidence, moreover, to show that it very frequently does so; and the only difficulty that Dr. Montgomery finds is in acknowledging that it does so *always*. If that were the case, he remarks, we should discover several corpora lutea whenever we opened the bodies of healthy young women in the habit of menstruating regularly; "a thing," he says, "which, as everybody knows, does not happen."

The assertion contained in the last sentence we should be very much inclined to dispute. The menstrual function is well known to be an exceedingly sensitive one, and liable to be materially disturbed by even a few days' illness; so that we cannot expect to find the normal ovarian changes present in most cases in which we are called upon to open the body. The opportunities of examining the ovaries of young women dead by accident or violence, while menstruation was recurring with regularity, are quite rare; but in those which have occurred we have abundant testimony that not only one, but many corpora lutea are present, in different stages of development and retrogression. The rapidity with which they become atrophied, however, provided pregnancy do not intervene, causes most of those which occur simultaneously in the ovaries to be so small and imperfect that they may be readily overlooked without a careful search. Still, we cannot doubt that they are there in all cases in which the menstrual process has been undisturbed, and may be discovered, if sought for.

Dr. Montgomery also retains the opinion, expressed in his first edition, in opposition to that of De Baer and others, that the yellow matter of the corpus luteum is deposited *between the two coats* of the Graafian vesicle. Dissections of the corpus luteum in the cow and sheep, and also in the human female within the first three weeks of its formation, must, we think, convince any one that there is no second membrane lining the interior of the corpus luteum, but that its yellow wall is in immediate contact with the bloody or fibrinous coagulum which occupies the cavity of the ruptured vesicle. A mistake, in this respect, is only liable to occur during the middle or latter period of pregnancy, when the coagulum has grown colourless and dense by long-continued absorption. Dr. Montgomery refers, in this connection, to a drawing (Plate 2, Fig. 2) in the essay on the "Corpus Luteum of Menstruation and Pregnancy" published

in the *Transactions of the American Medical Association* for 1851, in which, as he says, the corpus luteum is represented (p. 435) "with a central cavity, exhibiting a distinct white membrane, by which it is completely lined." But this white membrane, as stated at the same time by the author of the essay referred to, was simply a "fibrinous mass;" while the relations of the central coagulum and the yellow wall were "the same as in all the corpora lutea previously observed," *i. e.* in immediate contact with each other, without any trace of an intervening membrane. The appearance alluded to was consequently nothing more than the remains of the hardened and bleached coagulum; and we feel confident that this will be found to be the real character of all such lining membranes found on the internal surface of the corpus luteum.

On one other point we think Dr. Montgomery in error, viz: in regarding the yellow matter of the corpus luteum as taking part in the nutrition or development of the ovum, and as beginning to be formed before the rupture of the Graafian vesicle. If this yellow matter were really a source of nutrition for the ovarian ovum, or, as Négrier expresses it, a "kind of placenta for the germ," it would be difficult to understand why its complete development should be delayed till long after the expulsion of the egg from the ovary; for no one pretends that its formation has proceeded further than its "commencement" at the time the egg leaves the Graafian vesicle. But we are confident that its production has not even commenced at this time, and that it does not begin until the vesicle is already ruptured and the egg discharged. We have had so many opportunities of observing the Graafian vesicle, both in the cow and sheep and in the human subject, not only prominent and ready to burst, but actually ruptured and collapsed, without any yellow deposit having yet been formed, that we can no longer entertain any doubt on this point. The oily deposit in the substance of the corpus luteum, to which that body owes its yellow colour, so far from being intended as a source of nutritive supply, seems rather to be regarded as a simple process of fatty degeneration, which precedes the atrophy and disappearance of the corpus luteum, and which is altogether analogous to the fatty degeneration of the uterus after parturition.

This fatty degeneration and reconstruction, or "involution" of the uterus, as it is called, has been fully described by Dr. R. Heschl, formerly first assistant to Prof. Rokitansky at Vienna, now Professor of Pathological Anatomy at the University at Cracow. His account is adopted by Dr. Montgomery, and furnishes a very valuable means of diagnosis in cases where the body is examined after death in order to determine the question of a recent parturition. According to Prof. Heschl, the fatty degeneration in normal cases commences about the end of the first week, and soon becomes general. After the old muscular fibres have become thoroughly fatty, they disappear by absorption; and about the fourth week new fibres begin to be formed, which take their places. The entire renovation or reconstruction of the uterus is usually complete by the end of the second month.

One of the most valuable and interesting chapters in Dr. Montgomery's book (and they are all eminently so) is that in which he treats of the "Spontaneous Amputation of the Fœtal Limbs in Utero." This chapter has also been much enlarged since the first edition. It is illustrated with several finely executed wood-cuts, and gives an exceedingly complete and satisfactory account of those singular accidents to the fœtus which have so often puzzled the pathologist and obstetrician. A portion of the chapter is devoted to a class of malformations which present, we believe, quite a new question in medical jurisprudence—those, namely, which resemble so closely, in their appearance, recent wounds or lacerations, as to be liable to excite suspicions of intentional muti-

lation. The peculiar character of these malformations is pointed out by Dr. Montgomery, and ample directions given to prevent a mistake in diagnosis. The chapter forms a very appropriate termination to a book unusually rich in practical suggestions. J. C. D.

ART. XIX.—*Traité Expérimental et Clinique d'Auscultation appliquée à l'étude des Maladies du Poumon et du Cœur.* Par le Docteur J. H. S. BEAU, Médecin de l'Hôpital Cochin, Agrégé Libre de la Faculté de Médecine de Paris, etc. etc. A Paris: Chez Baillière, 1856. 8vo. pp. 628.

Treatise, Experimental and Clinical, on Auscultation, as applied to the study of Diseases of the Lungs and Heart. By J. H. S. BEAU, etc.

THE author of this work is not a new candidate for distinction in the annals of medicine. Any one tolerably conversant with the current medical literature of France, for the last twenty years, must be familiar with the name of M. Beau, as connected with a variety of questions pertaining to clinical researches. Few observers, in fact, are more frequently referred to by the French medical writers during the period just mentioned; but, if the recollections of the reader enable him to recall the scientific questions with which the name is associated, he cannot fail to be struck with the fact that, in general, writers have been accustomed to refer to the views of M. Beau, in order to dissent from or endeavour to refute them. Such, at all events, is the impression derived from our own reading of French medical works, and we have long since been led to expect, almost as a matter of course, whenever we meet with a citation of any of his opinions, to find that they are not in accordance with those of the author.

From the work which we now propose to review, we learn that the previous contributions of M. Beau to medical literature, have consisted in communications to the medical journals of Paris, and that they are, for the most part, contained in the *Archives de Médecine.* His articles have been numerous, falling but little short of fifty. Of this number, fifteen relate to diseases of the lungs and heart, being mainly devoted to questions pertaining, directly or indirectly, to auscultation as applied to the diagnosis of these diseases. The object of the present work is to reproduce and bring together the views contained in these fifteen memoirs, which have appeared, from time to time, during the last twenty years.

The work is not designed to be a complete exposition of the principles and practice of auscultation, but mainly to present and advocate anew certain doctrines peculiar to the author, and opposed to those which are commonly received. This being professedly the scope and character of the work, we shall regard it, as a reviewer, in that light. We purpose to direct our attention chiefly to the more prominent of these peculiar doctrines, and to analyze, with a due regard to brevity, the claims which the author sets forth in their behalf.

The author solicits of the readers of his work that they will, if possible, read it unbiassed by preconceived notions, and with the sole aim to discover the truth. He has a just appreciation, in the abstract, of the difficulty with which truth makes progress when opposed by settled convictions. What discoverer of new truth has not had abundant cause for impatience and dissatis-

faction at that principle of conservatism in the human mind which holds on with dogged tenacity to well-established error, fearful of novelty and innovation! There is, however, another phase of mental conservatism which may have presented itself less forcibly to the reflections of M. Beau—it is the pertinacity with which the mind adheres to its own creations. How seldom is it that the originator of new views is ever led to abandon them! How rare are the examples of authors who, publishing at different epochs, ever acknowledge the errors contained in their previous works; on the contrary, is it not an almost stereotyped mode of expression for an author to say that further observation, or experience, or reflection have only served to confirm the correctness of the conclusions to which he has been heretofore committed? If an assent to error involves an obstacle to the reception of new truth which is difficult to be overcome, how much greater is the prejudice in behalf of error when the latter has been not adopted but created by the mind which believes it to be true—the obstacle is then almost insuperable! We shall see whether the work before us furnishes occasions to illustrate most the tardiness with which scientific discoveries obtain credence, or the blind partiality which leads an author to continue to maintain, with zealous enthusiasm, peculiar doctrines that have been abundantly disproved.

M. Beau divides his treatise into two parts: the first part treats of auscultation of the lungs, and the second of auscultation of the heart and vessels. One-third of the volume is devoted to the former, and the remaining two-thirds to the latter. Each part is subdivided into two sections: the first section treating of physical signs, and the second of the different diseases, respectively, in their relations to these signs. We proceed to notice the portion of the work devoted to auscultation of the lungs.

The vocal sounds, normal and abnormal, occupy but little space. They are disposed of in about four pages. As regards the mechanism of the vocal sounds heard over the chest in health and disease, the author recognizes the principles of reverberation and conduction only, making no reference to the theory of consonance advocated by Skoda. Under the head of the normal sounds, the only novel statement which we observe is, that when the voice is produced by an act of inspiration, which it is asserted can be done after some practice, the pulmonary resonance is much more marked than when words are pronounced by an expiratory act. This fact we have not verified. Practically, however, it cannot be made of much service, inasmuch as in the cases of disease which present themselves for examination, we shall not find that patients are prepared by the necessary practice to be able satisfactorily to reverse the habitual mode of speaking during expiration.

Bronchophony and pectoriloquy are regarded merely as different degrees of resonance. This is the view taken by other authors; yet, certainly the distinction in character between these two signs is sufficiently defined. In bronchophony the *voice*, in pectoriloquy the *speech*, is transmitted. Now, not only may the voice be abnormally loud and near the ear of the auscultator without any transmission of speech, or, in other words, an appreciation of articulated words, but the pectoriloquy may be complete without intensity of vocal reverberation. In short, pectoriloquy may exist without bronchophony, as well as the latter without the former. This distinction is not generally made by practitioners who employ, more or less, physical exploration, a fact not to be wondered at, since the same remark is applicable, for the most part, to authors treating specially of physical diagnosis.[1] It must, however, be

[1] A distinction, hardly less marked, exists between merely increased vocal resonance and bronchophony. In the former, the reverberation or resounding of the

admitted that the distinction, in a practical point of view, is much less important than it would be, were it true, as was supposed by Laennec, that pectoriloquy is a diagnostic sign of a pulmonary cavity. M. Beau adds his testimony to that of others, to the occurrence of perfect transmission of speech in certain cases of pulmonary solidification. No mention is made of the transmission of whispered words, which, according to Walshe, is highly significant of an excavation. Our own observations, however, have led us to a different conclusion. In fact, we have oftener met with instances of solidification in which words spoken in whispers were transmitted, than with those in which ordinary pectoriloquy existed.

Without discussing the mechanism of ægophony, the author states that it does not pertain exclusively to pleurisy, but occurs occasionally in pneumonia. The united testimony of different observers has sufficiently established the correctness of this statement. He states that the sign may be produced by compression of the bronchi or trachea. He has observed it twice in cases in which this compression arose from aneurism of the aorta.

The respiratory sounds are considered at much greater length. Here we come to theoretical views which are peculiar, and on which he bestows considerable discussion. He embraces the normal respiratory sounds under the head of *souffle glottique.* In 1834, he submitted the theory that the tracheal, bronchial, cavernous, and vesicular respiratory sounds are all due to those produced in the upper respiratory passages; viz., the nostrils, pharynx, and larynx.[1] Authors of works on physical exploration, in the mean time, have generally referred to this theory and devoted to it consideration sufficient, in their judgment, to disprove it, but not enough to convince M. Beau of its incorrectness. So far from this, in 1840, he argued its merits in a paper contained in the *Archives de Médecine;* and, in the present treatise, he discusses the point still more elaborately, and with undiminished zeal.

This theory has found but few advocates. Dr. Spittal, of Edinburgh, has been its ablest supporter. Dr. Spittal, however, regards the sounds heard over the chest as laryngeal exclusively, and not guttural, as contended by M. Beau in his first publications. The latter, in the present treatise, appears to adopt the views of Dr. Spittal in this respect.[2] Dr. Spittal, availing himself of the three bronchial divisions of the trachea in the sheep, contrived an apparatus, by means of which he professed to demonstrate that the sounds emanating from the pulmonary vesicles are, in reality, produced in the larynx. To give an account of this apparatus would require too much space, and too tedious details. It is described and figured in the work before us. Such demonstrations are open to two important objections: 1. Artificial contrivances out of the body cannot be taken as representing the pulmonary organs *in sitû* and in vital action; or, at all events, inferences drawn from the former and

voice is greater than in health; in the latter the voice is abnormally transmitted, that is, nearer the ear of the auscultator. Here, too, as in the case of bronchophony and pectoriloquy, the vocal resonance may be greatly increased without bronchophony, and *vice versa.*

[1] M. Beau acknowledges his indebtedness for this theory to M. Chomel, who propounded an inquiry in 1824 whether the respiratory sounds might not admit of such an explanation. M. Chomel, however, makes no reference to it in the last edition of his work on Pathology, issued during the present year.

[2] The author, however, is careful to claim that he has not deviated from his original views. He says the title *bruit guttural* was given rather to indicate the approximative than the actual seat of the sound. We should have not thought less of his impartiality had he evinced less tenacity in maintaining his consistency. However it may be in politics or morals, in science consistency is not always a jewel.

applied to the latter, are to be received with great caution. It is impossible for art to compass all the elements involved in the performance of respiration. We can never be certain either that nothing essential has been omitted, or that something giving rise to important modifications has not been superadded. In view of this objection, such experiments are only entitled to a certain degree of weight as corroborative proof in behalf of conclusions based on observations made on the living body. 2. Contrivances which are somewhat complicated, like the apparatus of Dr. Spittal, require too much trouble for the experiments to be repeated by many; and, hence, we have limited testimony as to the results. Now it is, alas! but too true, that with no other disposition than that of truth-seeking, a mind biassed in favour of certain views, is liable to judge, even in matters of plain observation, by impressions received through a distorted medium. Honesty of purpose, although a *sine qua non*, is not the only requisite for a faithful observer. Freedom from preconvictions is hardly less essential. Here lies the secret of a large proportion of the false facts with which medical science abounds!

Exclusive of Dr. Spittal's experiments, on what does M. Beau base his theory? So far as the results of direct observation are concerned, mainly on the fact that when the sounds produced in the upper passages, *i. e.*, chiefly at the glottis, are voluntarily suspended in respiration, the respiratory murmur ceases to be heard on auscultation, and *per contra*, the latter are developed in proportion as the former are intense. Now, in the first place, it is difficult, if not, indeed, impossible to determine by direct observation, this relation between the sounds produced at the glottis and those heard over the chest. Auscultation cannot be practised in both situations simultaneously, and every auscultator must be aware that the respiratory sounds are by no means uniform as regards intensity with successive acts of respiration. They are constantly fluctuating in this respect. It is, therefore, evidently a theoretical assumption to say that when the vesicular murmur is feeble or absent, it is in consequence of a corresponding diminution or deficiency of a sound generated at the glottis. That, in general, the intensity of sound in these situations should correspond, is a rational inference from the fact that the force of the current of air, whether weak or strong, will affect equally the superior and inferior air-passages. It is difficult, indeed, to understand how the sounds at the glottis can be voluntarily repressed or suspended without, at the same time, diminishing the force of the current of air in the bronchial tubes and vesicles. The possibility of doing so, although assumed without discussion by M. Beau, certainly is questionable. But there is a mode in which observation may be made to bear upon this point; viz., by comparing, in different individuals, the relative intensity of the respiratory sounds in the larynx and over the chest. Is it found to be a rule that in persons with loud laryngeal respiration the vesicular murmur is also intense, and *vice versa?* This should be the case if the theory of M. Beau be correct. We happen to possess a collection of observations made on healthy persons in whom the sounds heard over the larynx, trachea, bronchi, and pulmonary organs were recorded, without any reference to this question. On referring to these notes, a rule of correspondence as regards the intensity of the sounds in the upper and lower passages, in habitual respiration is found not to hold good. If such a rule exists, the exceptions are so numerous as to disprove the dependence of the latter on the former.

The characters which belong to the vesicular murmur, contrasted with those of the laryngo-tracheal respiration, it would seem, should alone suffice to disprove M. Beau's theory. The laryngo-tracheal respiration embraces a sound

during inspiration and during expiration; the latter being more intense and prolonged than the former, if the respiratory acts are forced. The vesicular murmur very often consists solely of an inspiratory sound, and if a sound of expiration be present, it is short and feeble. M. Beau thus accounts for this difference:—

"The *bruit glottique* during inspiration penetrates the vesicles with the current of air which goes to fill them, and divides itself, so to speak, into an infinite number of minute isolated *bruits* which seem to be produced beneath the part of the thorax where they are perceived by the ear; on the other hand, the *bruit glottique* during expiration tends to reverberate through the pulmonary parenchyma at the moment when the air which conducts the sound leaves the vesicles. The *bruit* therefore gives rise to are verberation which is very imperfect. It gives the impression of a confused echo occurring in the large tubes, which with difficulty traverses the left parenchymatous layer of lung which intervenes." (P. 18.)

Notwithstanding this explanation, if the vesicular murmur were, in fact, produced at the glottis, and transmitted by reverberation, we should expect the expiratory sound to be oftener present and more intense than it is found to be in view of the greater intensity and direction of this sound over the larynx.

That the receding current of air during expiration is not an insuperable obstacle to the transmission of sound from the superior air-passages, is shown by the distinctness with which the whispering *souffle* is heard over certain portions of the chest in health. But, assuming that the *bruit glottique*, in other words, the laryngeal respiration, is transformed into the vesicular murmur by reverberation, how is the fact to be explained that the inspiratory sound is longer in the latter than the former? Does the sound become prolonged by being transmitted? How is the variation in pitch to be accounted for? The vesicular murmur is notably lower in pitch than the laryngeal respiration. Again, how is it that the *bruit*, during its transmission, undergoes such a marked change in timbre or quality? In the latter respect, the vesicular murmur differs in a striking manner from the sound heard over the larynx. We shall content ourselves with merely suggesting these points, without arguing them. Indeed, it seems almost superfluous to discuss the merits of this theory since experimental observation on the living and dead body appears to have demonstrated its incorrectness. In cases in which tracheotomy is practised, the *bruit glottique* is, of course, suspended, yet the vesicular murmur is found to continue. MM. Barth and Roger give a report of experiments in which the trachea was divided in inferior animals; respiration, carried on without the air passing through the larynx, nevertheless was accompanied by the vesicular murmur. Artificial respiration, after death, through the trachea separated from the larynx, was accompanied with the same result. M. Beau attempts to dispose of these experiments by supposing that an abnormal sound was produced at the aperture into the trachea, or the divided extremity of the latter, and that this sound replacing the *bruit glottique* gave rise to the respiratory murmur by transmission. But such a sound did not exist in all the cases, and when it was observed it differed from the sound produced at the glottis while the vesicular murmur was unchanged. Moreover, MM. Barth and Roger state that, in one instance, this sound was in fact transmitted, and could readily be distinguished from the coexisting vesicular murmur.

Our readers will perhaps think that we have devoted too much space to the notice of this theory. We should be disposed to enter into a full discussion of

it, if by so doing we could hope to relieve authors of works on auscultation of the apparent necessity to devote more or less space to a refutation of its claims to be regarded as the exposition of the mechanism of the normal respiratory sounds. We will add a single consideration, which occurs to us at the moment. If the vesicular murmur be due to the transmission of the *bruit glottique*, the intensity of the former should gradually diminish in proceeding downward over the chest. The author, in fact, states this to be the case, and adduces it as an argument in favour of his theory. Now, in certain persons the vesicular murmur at the base of the chest behind is quite as intense, if not more so, than at the summit of the chest in front. Auscultation of the chest in a series of healthy subjects will supply the proof of the correctness of this assertion.

The inquiry, "What is the mechanism of the vesicular murmur?" were we to pursue it, would lead to an extended discussion. We cannot, however, forbear bestowing on it a few words. That the murmur is produced solely by the friction of the air, in its passage into and from the vesicles, as supposed by Laennec, we do not believe. The truth probably is, that the air in the vesicles and smaller tubes is changed but to a limited extent as a direct consequence of the respiratory movements. On this point, Lehmann says:—

"We should form a very erroneous idea of the motion induced by this mechanism (the respiratory movements), were we to conceive that it was able to agitate the whole of the air contained within the cavity of the chest. For even when the contraction is relatively considerable, only a small fraction of the air is expelled, and an equally small proportion admitted by its expansion; hence it is only in the wider air-canals that the air can be absolutely changed, whilst in the narrower vessels there is only an undulating current of the stagnant air-column, induced by the contractility of the walls. The change, therefore, depends solely upon the different degrees of diffusibility of the gases. However simple this latter circumstance may appear, Vierordt has the merit of being the first who experimentally illustrated these physical relations."[1]

It is surprising that M. Beau has not availed himself of this view, in order to support his theory, indirectly, by disproving that commonly received. We would submit, as the most rational explanation of the vesicular murmur, that it is produced by the separation of the walls of the cells and intercellular passages which, to a greater or less extent, come into contact as the lungs collapse in expiration. The lungs collapse in this respiratory act, it is true, but partially; nevertheless, a certain proportion of the cells must be more or less deprived of air. The disruption of the surfaces in contact and slightly adherent, when the cells are dilated in the act of inspiration, gives rise to the vesicular murmur, or, at all events, is the source of the peculiar character of sound (the vesicular quality) by which this murmur is distinguished. This hypothesis will serve to account for the vesicular murmur being so often heard only during inspiration, and for the absence of the vesicular quality in the expiratory sound when the latter is heard. It will account, also, for the prolonged duration of the inspiratory sound. It enables us to understand why the vesicular murmur is intense in proportion to the duration and force of the preceding expiratory act; as, for instance, directly after coughing, the walls of the cells coming into contact to an extent proportionate to the completeness of the expiration and consequent collapse of lung. Moreover, the greater intensity of the vesicular murmur in children (puerile respiration) is rendered intelligible by this hypothesis. The greater mobility of the thoracic walls permits a greater extent of collapse of lung in the expiratory act in early life.

Regarding the normal respiratory sounds and their abnormal modifications

[1] Physiological Chemistry, Am. ed., vol. ii. p. 428.

as emanating from the larynx, M. Beau distinguishes them as the superior or supra-clavicular sounds, and he applies to the adventitious pulmonary sounds the names *inferior*, *infra-clavicular*, or *thoracic*. The latter he divides into *intra-pulmonary* and *extra-pulmonary*. The former include all the bronchial and vesicular râles, and the latter the pleural or friction sounds. We proceed to notice very briefly certain positions which the author takes in this portion of the work.

The division of bronchial râles into *vibrating* and *bubbling* he claims as original. It is generally attributed to M. Raciborski.

Of vibrating râles he recognizes the varieties generally adopted, viz., sibilant and sonorous or snoring; and he adds a new variety, which he calls a *râle insonore*. The intrinsic characters of the latter he does not distinctly point out. It is apparently an approximation to, rather than a well-developed *râle*. The title implies this. He states that it may be distinguished from the normal vesicular murmur by its being more or less circumscribed in the area over which it is heard with its *maximum of intensity*. We have no difficulty in understanding the sign to which he refers. The propriety of considering it as a distinct râle may be doubtful; but it should be understood, in order to avoid errors. It is sometimes confounded with an abnormal intensity of the vesicular murmur, and hence the latter is said to belong to certain cases of bronchitis. Again, it is confounded with what is called *rude* respiration, the latter properly denoting an approximation to the bronchial respiration.[1] Thus confounded, its pathological significance is liable to be misinterpreted. Dr. Bowditch applies to a sound, which we suppose to be the same, the title of "mucous respiration," and points out its occurrence in connection with the circumscribed bronchitis occurring in proximity to a tuberculous deposit.

The vibrating râles, according to M. Beau, are produced solely by an obstruction of the bronchial tubes from the presence of mucus, and are never due to swelling of the mucous membrane. The reason which he assigns for the latter statement is, that a swelling of the membrane must persist for a certain period, and this cannot be reconciled with the constant variations from one moment to another which characterize these râles. We can conceive, however, of local congestions occurring within the bronchial tubes, diminishing more or less their caliber, or producing complete occlusion, and disappearing in a short time, even lasting but a few moments. Every one has experienced transient stuffing of the nostrils from some accidental cause which comes and goes within a very brief period, being sufficient, while it is present, to prevent respiration through these passages; and if this may occur here, there is no good reason why it may not in the bronchial tubes. We think that M. Beau is in error in denying that the râles are ever produced by swelling of the membrane; but that they are generally caused by the presence of tenacious mucus is probable. A test of their being due to the latter is their disappearance or transference to another situation after an act of coughing.

The bubbling râles he divides into the gurgling, mucous, moist crepitant, and dry crepitant. The moist crepitant râle is that generally known as a subcrepitant or a fine mucous râle, being produced within the minute bronchial branches. The dry crepitant râle is the true crepitant characteristic of the first stage of pneumonia. This distinction, based on the sensation of moisture in the one case and dryness in the other, is well founded. The author is led to doubt whether

[1] M. Beau applies to the modified respiratory sounds heretofore called generally, by writers on physical exploration, *rude*, the name *tubo-vesiculaire*. The writer has suggested a name analogous in its significance, viz., *broncho-vesicular*.

the dry crepitant is a bubbling râle, and suggests that it is owing to an abnormal dryness of the air-cells, incident to the early stage of inflammation. He says:—

"I should not hesitate to adopt this manner of accounting for the production of the dry crepitant râle, if it were fully demonstrated that inflammation occasions dryness of the pulmonary vesicles."

M. Beau has probably never heard of the ingenious and beautiful explanation of the crepitant râle submitted by our countryman, Dr. Carr. We had the pleasure of stating it to one of the most distinguished of the Parisian teachers, and we were gratified with the readiness with which he admitted it to be the most satisfactory theory yet offered. We have a right to presume that our American readers are familiar with it, and, therefore, that it would be supererogatory to reproduce it here. M. Beau appears to think, because the sound is characterized by dryness, that it must denote an abnormal dryness of the parts in which it is produced. But this is a *non sequitur*. Nothing can be drier than the sound produced by alternately pressing together and relaxing the pressure of the thumb and finger moistened with a little paste or gummy solution. The dryness, when the crepitant râle is in this way imitated, is not less marked than when a lock of hair is rubbed between the thumb and finger, near the ear, after the plan proposed by Dr. Williams. We do not doubt that Dr. Carr's explanation will, in time, be adopted, and, as a matter of personal reputation, we would rather be entitled to the merit of having originated it, than to have been the author of any one of the theories peculiar to M. Beau.

The crackling sounds, occurring in cases of pulmonary tuberculosis, the author regards as belonging either in the class of humid or dry crepitant râles; and in this opinion we believe him to be correct.

With reference to the three varieties of *crumpling* sounds (*froissement pulmonaire*), as described by Fournet, we are gratified to find that M. Beau offers the same explanations of two of them which we have elsewhere done.[1]

The *bruit de cuir neuf* he regards as neither more nor less than a pleural friction sound, and the *bruit plaintif gémissant* is a vibrating râle. The *bruit rapide et sec que l'on obtient en soufflant sur du papier sec*, or a tissue-paper sound, he supposes to be a transmitted *souffle glottique*. The last-mentioned explanation is open to the objections which apply to the author's theory of the normal respiratory murmur. The sound is probably simply a crepitant râle.

Under the head of the extra-pulmonary, or pleural sounds, we find nothing peculiar to the author, and we proceed to pass rapidly in review the second section, devoted to pulmonary diseases.

Laryngitis, croup, spasm of the glottis, and *œdema glottidis*, are considered very briefly. With respect to these affections, the author does not offer any opinions particularly novel. In treating of tracheitis and bronchitis, however, he advances views which are at variance with those commonly entertained. Inflammation limited to the trachea is generally thought to be extremely rare. It is usually regarded as almost always associated either with laryngitis or bronchitis. M. Beau, on the contrary, thinks that it is quite common, occurring much oftener than bronchitis; in fact, he considers the majority of the cases of so-called bronchitis, as purely cases of tracheitis. The reasoning on which this opinion is founded, is as follows: Inflammation of the bronchial mucous membrane, accompanied by an abnormal secretion of mucus, in more or less abundance, must, except the inflammation be quite limited, give rise to obstruction sufficient to occasion an emphysematous condition of the lungs, and, proportionately, dyspnœa. Under these circumstances, too, râles will

[1] *Vide* Physical Exploration, etc., by the reviewer.

invariably be found over the chest. If, therefore, when inflammation is manifestly seated somewhere in the air-passages, there are no thoracic râles, no evidences of emphysema, and no dyspnœa—assuming the larynx to be unaffected—the affection is tracheitis. The presence of tracheal râles is not necessary to the diagnosis; for, owing to the size of the trachea, and the facility with which the mucus is expelled from this situation, in ordinary tracheitis, râles are not developed. It is clear that on these conditions bronchitis does not exist in a large proportion of the instances in which its existence is assumed by medical practitioners. The reasoning by which the author sustains his position is purely theoretical. Will it bear critical analysis? We trow not. That bronchial râles are often wanting in cases of so-called bronchitis, will be admitted. Probably it oftener happens that they are wanting at the particular moments when auscultation is practised, than that they are altogether absent, for we know that they disappear and reappear at different times, being rarely constant during any period of the disease. But every practical auscultator must admit that bronchial râles are not infrequently more or less abundant in cases of so-called bronchitis, without the physical evidence of emphysema, and without dyspnœa. M. Beau assumes that these three diagnostic points are generally associated. This assumption is certainly disproved by clinical facts. Bronchial râles, unusually constant and present in a marked degree, do not necessarily involve any appreciable embarrassment of respiration. He accounts for the supposed necessity of dyspnœa in bronchitis, thus: the obstruction from the presence of mucus in the bronchial tubes, is overcome by the inspiratory movements; while expiration, which is effected mainly by the force of elasticity, is insufficient for the free expulsion of air, which consequently accumulates and reacts upon the vesicles. This reasoning will again come up under the head of emphysema. We may simply state here that M. Beau overlooks the fact of the inspiratory being the powerful act only during tranquil respiration. With muscular co-operation, either voluntarily or instinctively, to overcome an obstacle in the air-passages, the expiratory exceeds the inspiratory act, in force, by about one-third, according to the experiments carefully made with reference to this point, by Mr. Hutchinson. We cannot stop to discuss this subject, more than others, at length. The impartial reader, we think, here, as in other portions of the work, cannot fail to be struck with the facility with which the author arrives at pathological conclusions, not less important than novel.

In treating of asthma, M. Beau ignores entirely the hypothesis of spasm advocated by M. Amédée Lefévre, in a prize essay, published in 1834, and generally adopted by medical writers. He recognizes as the sole pathological condition productive of asthmatic paroxysms, the presence of tenacious mucus in the bronchial tubes. To sustain this view, he is obliged to deny that an attack of asthma ever occurs instantaneously, and to assert that in all cases it is followed by more or less expectoration. That an asthmatic paroxysm often ends before any expectoration takes place, he cannot but acknowledge, but in such cases he insists that the obstructing mucus is removed from the small into the larger tubes, where it ceases to interrupt the passage of air, and is subsequently expectorated. According to this view, asthma is always neither more nor less than bronchitis affecting the smaller tubes. We incline to the opinion that in the statement just made, the author is correct; but that the dyspnœa in asthma is due exclusively to the presence of mucus, seems to us improbable in view of the small quantity expectorated even after some violent attacks. The quantity of mucus, in other words, is insufficient to account

for so much embarrassment of respiration. The theory that the latter arises exclusively from spasm, on the other hand, is questionable. There remains a pathological condition which M. Beau does not recognize, viz., swelling of the bronchial mucous membrane. We may analogically infer that swelling in the smaller tubes sufficient to occasion dyspnœa more or less urgent, may occur suddenly, and last for a few hours only, just as we observe it to take place in the nostrils. This appears to us the most rational explanation of asthma; and, as thus regarded, the affection, is, as M. Beau supposes, neither more nor less than bronchitis affecting the smaller tubes. We speak now of asthma occurring irrespective of emphysema.

The author passes from asthma to the affection just named, viz: emphysema. He treats only of the vesicular variety of emphysema. The theory of the mechanism of its production which he advocates is, that it is due to the reaction of the air within the vesicles upon the walls of the latter, when, from the presence of tenacious mucus, there is obstruction in the bronchial tubes. This reaction, of course, occurs in consequence of obstruction to the current of air in expiration; but the dilatation of the cells does not result from the difficulty of effecting the expulsion of air by the expiratory movements in respiration so much as from the existence of obstruction in connection with paroxysms of coughing. To quote the author's words—

"The accumulation of air depends on the fact that, being forcibly acted on by the movements incident to coughing, and with difficulty overcoming the obstacle afforded by the presence of mucus in the bronchial tubes, it reacts on the vesicles, which it dilates." (P. 146.)

Now, if the intensity of the respiration be increased, either voluntarily or instinctively, as we have seen, the expiratory is a more forcible act than the inspiratory. But, however this may be as regards respiration, there can be no question that the force with which the air is expelled with the act of coughing is vastly greater than that with which the air is inspired. How, then, can a collection of mucus furnish an obstacle which the violent expiratory effort in coughing with difficulty overcomes, but which does not obstruct the current of air in inspiration? This question suffices to show the absurdity of the theory. But, were we to pursue the subject further, it would be clear from the arrangement of the bronchial tubes, consisting of a series of branching cylinders successively diminishing in caliber, that a movable obstacle, like a plug of mucus, is likely to produce an obstruction to the passage of air much greater in inspiration than expiration. As pointed out by Dr. Gairdner, in the former case the mucus, moving in a direction from the larger to the smaller tubes, acts like a ball-valve, and limits or prevents the entrance of air into the cells over a greater or less number of lobules; while in the latter case, moving in an opposite direction, the tendency is to a removal of the obstruction. The ingenious theory of Dr. Gairdner, which attributes the origin of emphysema to collapse of more or less of the pulmonary lobules, produced by bronchial obstruction in the manner just mentioned, is not alluded to by M. Beau. Both theories agree in considering bronchial obstruction as the point of departure for the production of this lesion; but it is curious that precisely opposite effects of the obstruction are described by these two authors. M. Beau says the result is a dilatation of the cells from the difficulty of the egress of air during the expiratory efforts incident to coughing. Dr. Gairdner says that the obstruction affecting chiefly the ingress of air in inspiration, collapse of more or less of the lobules ensues, and consequently an abnormal expansion of the remaining lobules from the atmospheric pressure. So far as the comparative merits of

the two theories are concerned, we do not see how any one can hesitate to give preference to that of Dr. Gairdner.[1]

M. Beau devotes considerable space to the discussion of the conclusion to which Louis was led by his researches, viz., that the production of emphysema does not necessarily or generally involve the pre-existence of bronchitis, but that it is a primary or spontaneous lesion occurring irrespective of any mechanical agency, being due to an abnormal condition of the force which presides over the development of hollow organs. In contending for the dependence of emphysema on bronchitis in the majority of instances, we must think M. Beau is correct, albeit this opinion is opposed by so accurate and truth-loving an observer as Louis. In not accepting the conclusion at which the latter arrives relative to this point, we are not guilty of the presumption of doubting either his capacity or honesty. In a large proportion of the cases of emphysema met with in the wards of a hospital, the affection has existed for a greater or less period, often for many years, having been perhaps developed in childhood. Under these circumstances, it is often impossible to obtain reliable information as to whether the symptoms of the emphysema or those of bronchitis had precedence. That the latter precedes in certain instances we know, for it has occurred to us, within the past few years, to have witnessed the development of emphysema, as it were under our eyes, in two patients whom we had repeatedly examined while suffering from persisting bronchitis, before dilatation of the vesicles had ensued.

Finally, on the subject of emphysema, the author makes a remark which is worthy of being borne in mind, with reference to the portion of the lung most prone to become affected with this lesion. Pathologists generally are agreed that the superior and anterior portion is especially apt to be found in an emphysematous condition. M. Beau thinks this is not certain, inasmuch as the dilatation of the cells in the posterior portion cannot be ascertained by the gross appearances, in consequence of the existence here of hypostatic congestion.

Under the head of pneumonia we meet with nothing which, from its novelty, claims notice. The same is true of pleurisy, pneumo-hydrothorax, gangrene of lung, pulmonary apoplexy, and œdema, except that in the latter affection the author differs from pathologists in thinking that the serous effusion takes place, not into the air-cells, but into the connecting areolar tissue.

Under the head of pulmonary tuberculosis, the only point on which we desire to comment is the significance of a prolonged expiration. It is well known that our lamented countryman, James Jackson, Jr., first directed attention to the importance of studying the expiratory murmur. He showed that a prolongation of the expiratory sound was frequently a sign of the presence of tubercles, and that, in the development of the bronchial respiration, the abnormal change is manifest in the relative direction of this sound. Jackson studied only the characters of the expiration which pertain to duration and intensity; those relating to quality, and especially pitch, were left for other observers. M. Beau states that a prolonged expiration much oftener denotes a cavity than the presence of crude tubercles, and he adds:—

"I am not aware of any sign which may enable us to distinguish the prolonged expiratory murmur due to crude tuberculization from that due to cavities."

[1] For Dr. Gairdner's views, vide *On the Pathological Anatomy of Bronchitis and the Disease of the Lung connected with Bronchial Obstruction.* Edinburgh, 1850. For review of this work, vide *British and Foreign Medico-Chirurgical Review*, April, 1853. These views are not unknown in France. They are adopted by Valleix in the last edition of his *Guide du Praticien.*

This distinction may be made without difficulty, if the description which we have elsewhere given of the expiratory sound in the bronchial and cavernous modifications of respiration are based on correct observation.[1] According to this description, in bronchial respiration the expiratory generally exceeds the inspiratory sound in intensity, and more especially in pitch. The reverse obtains in the cavernous respiration; the expiratory sound is less intense and lower than the inspiratory. We have here a means of discrimination which, if reliable, is certainly of practical importance. Theoretically, M. Beau could not very consistently admit this distinction, inasmuch as he refers the origin of the cavernous as well as of the bronchial and vesicular respiratory sounds to the glottis.

The number and character of the peculiar views entertained by M. Beau, pertaining to auscultation as applied to the respiratory organs, prepares the reader to expect a similar series in the portion of the work which treats of the heart. In this respect, the reader's expectation is not disappointed. The author contends for theories of the mechanism of the movements and sounds of the heart in health and disease, strikingly at variance with the conclusions which others have deduced from the results of investigations bestowed on this subject. We shall devote the remainder of this article to a brief notice of these theories.

The question whether the apex of the heart elongates or contracts during the systole of the ventricles, has long been mooted. According to Vesalius, and other of the older anatomists, the vertical diameter of the organ is increased. This was the opinion of Harvey. Subsequent observers have generally described the systolic contraction as extending to all the diameters. Some, however, have been convinced that this description is incorrect, and that the heart is lengthened during the systole of the ventricles.

Doctors Pennock and Moore were led to this conclusion by their experiments made in Philadelphia in 1839. If we are correctly informed, Professor Dalton, of New York, has arrived at the same conclusion, and is accustomed to verify its correctness in his vivisections performed in the class-room. M. Beau believes that the heart is shortened during the ventricular systole. It would seem that this is a question which might be easily settled by observation. It is manifestly to be thus settled, and not by *à priori* reasoning from the direction which the muscular fibres are found to pursue on dissection of the heart. May it not be the case that different species of animals, or different individuals of the same species; or, again, the heart of the same individuals under different circumstances pertaining to the circulation, differ in this respect, shortening occurring in some and elongation in other instances?[2] This suggests itself as affording an explanation of a singular discrepancy of opinion on a matter respecting which, if there be uniformity in fact, one would think all observers should be agreed.

Most observers agree in attributing the impulse of the heart in the præcordia to the movements of the apex during the ventricular systole. M. Beau, however, holds a different opinion. He considers the impulse as occurring during the ventricular diastole. This theory, which may be distinguished as

[1] *Vide* Prize Essay on Variations in Pitch of Percussion and Respiratory Sounds, 1851; and Physical Exploration, etc., 1856.

[2] We can easily imagine that this is a difficult point of observation, if small animals are employed for the experiments, such as the frog or birds; and in larger animals the spiral movement of the heart probably renders it somewhat difficult to determine whether shortening or elongation occurs.

the theory of diastolic impulse, enunciated by M. Beau more than twenty years ago, has a few supporters in Europe, and in this country has found an able advocate in Professor Alfred Stillé. The theory involves other peculiar views concerning the mechanism of the heart's action. According to M. Beau, the ventricular diastole is due to the systolic contraction of the auricles. The ventricles, after their systole, are passive; they do not dilate, as is generally supposed, either from their elasticity or as a result of the contraction of certain of the muscular fibres which enter into the composition of their walls, but they are dilated solely by the distending force derived from the current of blood impelled into their cavities, by the contraction of the auricles. The auricles, thus, are in fact, the active agents in the dilatation of the ventricles. The force of the current of blood driven into the ventricle by the auricular contraction, elongates the latter, and gives to the organ the movements against the thoracic wall which occasion the impulse or beating in the præcordia.

The diastolic theory involves an order of succession in the movements of the auricles and ventricles different from that generally supposed to take place. M. Beau takes as a point of departure the contraction of the auricles. The auricular systole causes the diastole of the ventricles, and the ventricular contraction immediately follows. Then occurs the period of repose of the organ; viz., the period which elapses from the completion of the ventricular, to the commencement of the next auricular systole. According to the commonly received descriptions, the diastole of the ventricles immediately succeeds their contraction, and the period of repose is supposed to be after their diastole, before the succeeding systole. The distinctive feature in the theory of M. Beau, so far as concerns the order of succession of the movements, relates, then, mainly to the occurrence of the diastole of the ventricle. According to this theory, it occurs just *before* the ventricular systole, and is *preceded* by a period of repose. According to the current doctrine, it occurs immediately *after* the ventricular systole, and is *followed* by a period of repose.

We have called these views of M. Beau *a theory*. The points, however, which have just been mentioned are not properly subjects for theoretical discussion in the vulgar acceptation of this term. They are points to be settled by simple observation. Does the heart, as determined by the sight and touch, perform movements adequate to the production of the well-known impulse in the præcordia during the ventricular systole or diastole? Do the senses afford evidence that the ventricles dilate immediately after they contract, prior to any apparent contraction of the auricles, or does this dilatation take place after the lapse of a certain time, and do the auricles previously contract? These questions are to be answered by an appeal to facts ascertained by exposing the heart to view in inferior animals during life, and by witnessing its movements in the few remarkable instances of malformation in which either this organ has been situated exterior to the thoracic wall, or, from deficiency of the sternum and costal cartilages, it has been open to inspection *in situ*. Several instances of these two kinds of malformation are recorded in the annals of medicine; and we need not remind those of our readers who have bestowed any attention on this subject, that numerous experiments have been made on a grand scale in London, Dublin, Edinburgh, and in this country.[1] To repro-

[1] The reader will find these experiments detailed in full in *Hope's Treatise on Diseases of the Heart*, American Edition, with Additions, by Dr. Pennock. Also a *résumé* in the last edition (1854) of the *Traité Pratique D'Auscultation, par Barth et Roger*. The latter work contains a full discussion of the theories of M. Beau.

duce these experiments and observations, or even to present a digest of the results, would occupy too much space, and is foreign to our present purpose. With some discrepancies relating to points of more or less importance, they furnish the basis of the doctrine relating to the impulse of the heart and the order of succession in the movements of its parts, which are commonly received, and are opposed to the views of M. Beau. How does the latter sustain his theory? He adduces the results of experiments performed by himself on frogs, rabbits, dogs, and birds. As regards the animals selected, and the manner of performing the experiments, there is room for criticism; but, waving this, how are we to account for the discrepancy of his results with those of other observers? Evidently by the same rules of evidence which should influence a judge or jury in courts of law when conflicting testimony is rendered by different witnesses. Assuming that a witness is perfectly honest, if it appear that he is interested or prejudiced, his testimony carries but little weight. Again, if there are numerous witnesses, and the great majority concur as to certain points, this is a fair ground for presuming that the few who offer rebutting testimony are in the wrong. Judged by these rules, the results of M. Beau's experiments are to be received with distrust. They were made, in great part, to confirm theoretical views which he had advanced many years before. The experiments made by the London, Dublin, and Philadelphia committees were made, on the other hand, in the presence of those who were not thus committed. Numerically, the testimony in behalf of the results obtained by the latter greatly preponderates.

In saying that the foregoing points pertaining to the movements of the heart are to be settled by simple observation, we would not be understood to attach no importance to inferential conclusions. In fact, the incorrectness of the theory of diastolic impulse, and the theoretical views which it involves, may, we conceive, be conclusively shown without resorting to an ocular examination of the heart in action. The impulse of the heart, and that of the arteries situated near the central organ of the circulation, are found to be synchronous. Now, admitting, as M. Beau states (and in this respect the observations of others concur), that the systole of the ventricle succeeds very quickly that of the auricle, if the heart's impulse be due to the latter, there should be a distinctly appreciable interval between it and the diastolic impulse of the arteries situated ever so near the heart. Inferentially, it is quite inconceivable that the amount of muscular structure contained in the valves of the auricles, is sufficient to propel the blood into the ventricular cavities with a degree of force adequate to produce the præcordial impulse, more especially when the latter becomes as violent as it frequently does in palpitations. If the auricles were indeed capable of contracting with the force requisite to account for the heart's impulse, it is inconceivable that regurgitation into the veins should not habitually occur sufficiently to give rise to venous pulse in the jugular veins at least, such as we find does occur when regurgitation through the left auriculo-ventricular orifice takes place during the ventricular systole, owing to insufficiency of the tricuspid valves. Again, it is irrational to suppose that, after the systole, the ventricle remains firmly contracted until a forced dilatation results from the action of the auricle. The ventricles and auricles communicate somewhat like chambers with folding doors, which admit of being opened with the slightest force, but only in one direction. What is to hinder the passage of blood from the auricle into the ventricle by the force of gravitation, added to that derived from the column of blood pouring into the former from the veins, except the ventricle be closed by an active contraction of its muscular walls? This persisting contraction pre-

cludes any period of muscular repose. M. Beau meets this objection by assuming that the ventricular systole is succeeded by a state of tonic contraction adequate to resist the ingress of blood until it is poured into the cavity by the auricular contraction. This, besides being hypothetical, is highly improbable.

The study of the mechanism of the normal sounds of the heart has occasioned great diversity of opinion, and the subject must be considered still open for discussion and fresh researches. This remark applies more especially to the first sound. Most physiologists, we believe, are agreed as regards the dependence of the second sound on the arterial valves; but admitting the latter to be concerned in their production, the mode in which they are produced, that is, the physical principles involved, is not fully settled. Among the twenty-seven theories of the heart's sounds, enumerated by MM. Barth and Roger, the theory of M. Beau is included, and perhaps is as unsatisfactory as any in the list. But it is to be considered that in theorizing on this subject, M. Beau labours under the disadvantage of being obliged to conform to his theory of the movements of the heart. The first sound, according to the theory of diastolic impulse, is not synchronous with the systole, but with the diastole of the ventricles. M. Beau attributes it to the shock caused by the current of blood driven by the auricular contraction into the cavity of the ventricle, and striking abruptly against the inferior portion of this cavity. Without discussing the intrinsic merits of this explanation, it is sufficient to say that it cannot be true if the theory of diastolic impulse be false. Its claims are thus summarily disposed of. The second sound M. Beau attributes to the column of blood arising at the auricles from the veins, and impinging against the auricular walls. This hypothesis strongly illustrates the difficulty with which an explanation of the second sound is made to harmonize with the author's theory of the heart's movement. It would be, however, needless to subject the arguments adduced in its behalf to critical analysis, or to show its improbability and inadequateness, for it is disproved by the facts determined by repeated experiments, establishing beyond a reasonable doubt, that the second sound is produced at the arterial orifices of the ventricles, and that the semilunar valves are concerned in its production.[1]

M. Beau recognizes certain accessory normal sounds, which are generally combined with the first sound of the heart, and serve to reinforce and to modify its character to some extent. One of these accessory sounds is the ringing intonation, called by Laennec the *cliquetis métallique.* M. Beau attributes this to the striking of the apex of the heart against the thoracic wall. We believe this to be the correct explanation. If the ribs are pressed with the finger, while the stethoscope is applied at a situation not far removed from the point of percussion, the note elicited has an amphoric quality. We can understand that this intonation will be marked especially when the stomach is distended with gas. Another accessory sound is the *bruit musculaire.* M. Beau attributes this to the ventricular systole which succeeds the auricular contraction so quickly as to cause this *bruit* to be incorporated with the first sound.

M. Beau arranges the rhythmical succession of the heart sounds in a manner peculiar to himself. He regards the first and second sounds as equal in duration, and the length of the interval between the second and the first sound as the same as either of the sounds. Musically expressed, the succession of

[1] *Vide* Experimental Researches, contained in *Hope's Treatise,* Amer. ed.

sounds is represented by triple time, the sounds being indicated by two crotchets, and the silence by a rest.

Connecting with each of the beats in the bar (according to this representation), the movements of the heart which belong to it, after the theory of M. Beau, the result is as follows: The first beat or crotchet embraces the contraction of the auricles, the dilatation of the ventricles, and the ventricular systole. These movements, in other words, are all involved in the first sound. The second beat, or sound, embraces simply the dilatation of the auricles. During the *rest*, or silence, repletion of the auricle takes place—the ventricles remaining contracted and empty.

In the foregoing arrangement, the author differs from nearly all other observers as respects the relative duration of the first and second sounds, the former being generally reckoned nearly twice as long as the latter. He overlooks the brief period of silence between the first and second sound, and he estimates the period of silence following the second sound at a higher fraction than is usually employed, viz., at one-third.

The abnormal sounds are divided into the extra and intra-cardiac murmurs. The extra-cardiac or attrition sounds are considered very briefly, the author, under this head, presenting simply a succinct statement of well-known facts. As respects the intra-cardiac murmurs, however, he indulges his fondness for original views, and, in fact, his theories of the movements and normal sounds of the heart render it necessary to adopt explanations of these murmurs at variance with the opinions commonly entertained. The reader can hardly fail to recognize in the portion of the work treating of the abnormal, or in that in which the normal sounds are considered, an effort of adaptation to the theories pertaining to the movements of the heart. This adaptation demands not only deviation from the opinions generally received, but a denial of certain pathological facts usually considered as established.

M. Beau attributes the production of intra-cardiac, or, as they are commonly called, bellows murmurs, to an exaggerated friction arising from a want of proportion between the volume of the current of blood and the size of the cardiac passages. This want of proportion involves positive or relative contraction of one or more of the orifices.

A bellows murmur, as every practical auscultator is aware, is associated in the vast proportion of instances with the first sound of the heart. This sound, according to the doctrine of the diastolic impulse, is caused by the auricular contraction. To be consistent, therefore, with this doctrine, it is necessary to assume that the murmur is caused by the passage of blood in its natural course from the auricle to the ventricle. Of the several orifices, the left auriculo-ventricular is oftenest the seat of lesions. Now, assuming that the blood passes from the auricle, after the apex impulse during the ventricular diastole, according to the doctrine generally believed, a murmur generated by the current in this direction, it is evident, will in point of time be associated with the second and not the first sound. Hence it follows that, according to this doctrine, the murmur incident to disease of the mitral orifice, and accompanying the first sound, must be due to regurgitation. But it does not suit M. Beau's theories of the movements and normal sounds to attribute the murmur, under these circumstances, to regurgitation. This explanation is,

in fact, incompatible with the doctrine of diastolic impulse. How does M. Beau overcome this difficulty? By asserting that regurgitation takes place only exceptionally, *i. e.*, in a very small proportion of cases. He says:—

"I certainly do not deny, absolutely, that a reflux of blood into the auricle may take place, and a murmur be caused by this reflux; but I think that this occurs only in some exceptional cases. In fact, it is hardly conceivable that the blood should be forced by the ventricular contraction into the auricle, when it finds an easy egress by the arterial orifice; for this reason I think that the reflux into the auricle occurs only in cases in which contraction of the arterial orifice complicates insufficiency of the auriculo-ventricular valves, obstructing the passage of the blood from the ventricle into the artery." (P. 300.)

These assumed pathological facts are so extraordinary that the author was bound to adduce data for their support, aside from the consideration that they are necessary to sustain his physiological theories. We have a right to demand evidence gathered in the dead-room for statements directly opposed to the opinions of other observers. In the absence of this evidence, the author cannot complain that the reader accounts for the statements on the principle of adaptation to which we have alluded; in other words, the author believes the statements to be facts, because otherwise his theories of the normal sounds and movements of the heart will be invalidated.

A murmur accompanying, not following, the first sound, M. Beau is obliged to refer always to the auriculo-ventricular orifice. Conformity to his physiological theories requires this. If produced by the ventricular systole, at the arterial orifices, they must occur after the first sound and impulse. This he asserts to be the case. But this assertion is certainly disproved by clinical experience.

Again, a murmur associated with the second sound, according to clinical observation, is sometimes, although rarely, due to the current of blood from the auricle to the ventricle. This, of course, M. Beau cannot admit, inasmuch as the theory of diastolic impulse involves the passage of blood in that direction synchronously with the first sound. He denies, therefore, that a bellows murmur with the second sound ever originates at the auriculo-ventricular orifice, and asserts that it always depends on regurgitation from the aorta.

It is well known that, in determining the seat of intra-cardiac murmurs, considerable importance is attached by auscultators to the situation where they are heard with a maximum of intensity, and the direction in which they are furthest propagated. If any rules in physical exploration are well established, it is that these two points are entitled to confidence as a guide in the localization of valvular lesions. We can testify that, in a clinical experience considerably extended, we have found them reliable. But M. Beau cannot, of course, admit that an arterial murmur with the first sound is heard loudest over the arterial valves, and transmitted upward by the vessels, while it is perhaps quickly lost as the stethoscope is carried over the body of the heart toward the apex. He cannot admit this fact, demonstrable as it is at the bedside, because it is incompatible with the theory of diastolic impulse. According to this theory, the blood is not propelled into the arteries by the movement which causes the first sound. Hence, as just stated, he denies that a murmur produced at the arterial orifices ever accompanies the first sound.

The length to which this review is already extended precludes notice of the section devoted to the individual affections of the heart. The points, however, embraced in this section, inviting criticism, mainly relate to the application of the theoretical views to which we have referred in the foregoing remarks. For

the same reason, we must forego any critical notice of the concluding portion of the work, which treats of auscultation as applied to the bloodvessels. An analysis of the latter would develop peculiar doctrines not less than the portions which we have passed in review, but they have neither the same interest nor importance.

As before stated, the object of this work is to reproduce and bring together opinions of the author heretofore submitted in numerous papers distributed in different medical periodicals. And it is a volume truly remarkable for a collection of opinions which, for the most part, although long before the profession, and advocated by the author with great earnestness and ability, have been adopted by others only to a very limited extent.

Judged by the character of the work, the author's mental constitution is marked by certain peculiarities, which are often enough observed, but rarely in connection with so much industry and real ability. A pruriency for originating novel views appears to be the leading characteristic. Having formed a new theory, it is irrevocable, so far as his own belief is concerned. Facts which are incongruous, however stubborn, are less obstinate than his faith, and only serve to task his ingenuity in endeavouring to effect a compromise; hence he finds it easier to modify or reject the former, than to alter or abandon the latter. A clinical observer, he sees exclusively through the medium of the preconccived notions which he has originated. The work is both interesting and valuable in a psychological point of view, exemplifying that talent, zeal, and honesty are not sufficient for the investigation of truth, and that, without the well-balanced mind which belongs to the true philosopher, these mental qualities may serve to retard instead of promoting the advancement of science.

A. F.

BIBLIOGRAPHICAL NOTICES.

ART. XX.—*The History, Diagnosis, and Treatment of the Fevers of the United States.* By ELISHA BARTLETT, M. D. Fourth edition, revised, by A. CLARK, M. D. 8vo. pp. 610. Philadelphia: Blanchard & Lea. 1856.

FEW physicians have fallen in the prime of life leaving behind them a more conspicuous evidence of their merit than Elisha Bartlett. His singular rectitude of mind and purpose, as well as his clear comprehension of the subject he undertook to expound, are prominent in every page of this work, which must in all time remain a monument to his honour. Fortunately he bequeathed to his friend, the present editor, the duty of preparing a new edition for the press; a labour of love which has been lovingly performed, and in a scientific spirit altogether in harmony with that of the author himself.

We may take for granted that our readers are acquainted with the former editions, and shall therefore only inform them of what new matter has been added; for of alterations in the original text, few could be needed when the work had already been so often subjected to the severely critical revision of its author. The additions made by Dr. Clark are numerous, but are all such as the progress of knowledge has rendered necessary. They are therefore mainly limited to the natural growth of the several branches of the subject, with occasional notices in the bibliographical department which compare favourably with the brief but comprehensive and pungent criticisms of the author himself.

In speaking of the relation of *age* to typhoid fever, Bartlett had omitted to notice the reason why it so generally occurs in persons under the fortieth year of life, viz., that a first attack usually prevents a subsequent one. Dr. Clark refers to the case of the town of Richmond, Mass., where an epidemic in 1840, and subsequent years, attacked the old as well as the young. The reason of this peculiarity was, that the locality in question had never before been visited by the disease. A similar occurrence has been observed in reference to other diseases which are usually confined to young persons. Thus measles, as is well known, seldom attacks adults. In circumstances like the above it affects all ages alike. In the Feroe Islands this affection had not appeared for sixty-five years; but at the end of that period it was introduced from Copenhagen, and 6,000 persons, out of a population of 7,782, were attacked, both old and young.

In the chapter relating to the theory of typhoid fever, the editor deals very tenderly with the speculations of Virchow, Parkes, and Jenner, saying that "we may properly wait for additional facts to confirm these doctrines." It is evident, we think, that in his opinion we shall have to wait a long time. For what, after all, is that disease which resolves itself into "an alteration of the nervous system?" Surely, these are words without knowledge.

In the treatment of typhoid fever the author notices the importance attached by Huss, of Stockholm, to the application of wet compresses to the abdomen. No doubt they form a clean and pleasant kind of poultice. In regard to the use of quinine in this disease, which was introduced into practice by the absurd doctrine of Dundas, of Liverpool, that intermittent, remittent, and continued fever, are mere varieties of the same disease, Dr. Peacock concludes, after a full examination of the subject, that it does no good, but often harm. This is precisely the inference we have drawn from what has fallen under our own observation. Where it seemed to act at all, it produced great cerebral disturbance and distress; in other cases its influence appeared to be perfectly negative.

Speaking of the contagiousness of typhus, Dr. Clark states, as the result of

observation amongst the physicians of his own acquaintance in New York, who had care of emigrants affected with this disease, that about fifty took the fever, and nearly one-third of that number died. He also confirms the statement of Dr. Stokes in regard to the frequent predominance of cerebral and nervous symptoms among persons of the educated classes who are attacked.

The editor describes very faithfully the condition of the encephalon in this disease, and calls attention to the flattened aspect of the convolutions as indicative of the pressure exerted upon them by the serous effusion, or by engorged vessels when the effusion is small in quantity. He is disposed to think that there is something more to account for the cerebral symptoms than merely congestion and passive effusion. In support of this opinion, he calls attention to the opalescent state of the arachnoid in many cases, and to certain whitish and sometimes elevated grains which, he intimates, denote a more active process than the term congestion implies. We should think not more than active as distinguished from passive congestion would explain; and that the former is present, and not the latter, is attested by all the cerebral phenomena of the disease. That this congestion never merges into inflammation, so as to leave the usual traces of the latter process, is, we presume, attributable to the slight tendency which the blood has to form plastic exudations in typhus, on account of its deficiency in fibrin, and not improbably, also, to its impaired vitality.

The lesion of the glands of Peyer, which is characteristic of typhoid fever, is stated by Dr. Clark to be met with in "a few instances" of typhus, along with a corresponding enlargement of the mesenteric glands. "In none of these cases," he remarks, "in which ulcers were found after death, did the symptoms lead the physician to suspect their existence during life." We should be better satisfied of the value of this statement if it were made as the evidence of the editor himself. Even then, it must be remembered, that if patients are not seen until an advanced stage, the diagnosis is difficult, if not impossible, in certain cases. Besides all which, the disease of Irish emigrants is not exclusively typhus. During certain seasons, cases of typhoid fever are not rare among them.

The bronchial complication of typhus has of late years acquired a special interest from the statements of Rokitansky, who describes a form of "typhus" in which the bronchia and their glands form the chief seat of the disease. But it is to be observed that this pathologist considers "broncho-typhus" as only another form of typhoid fever, which he, in common with German writers, entitles *typhus*. It is true that he asserts this form of disease to be "beyond all doubt the basis of the spotted contagious typhus, and very probably also of the Irish and North American typhus," but no proof is presented of its really being so. Dr. Stokes, in the passage quoted by Dr. Clark (p. 188), offers none, and proves nothing about the bronchial complications of typhus, except that they are no more inflammatory than the other hyperæmiæ which occur in this disease, and the editor himself admits (p. 222), that in the examinations of the subjects of ship fever made at New York, although enlargement, and even softening of the bronchial glands, is frequently met with, nothing resembling the typhus matter has been found in them.

The editor sustains the opinion of Dr. Stokes, that typhus fever tends to the development of pulmonary tubercles. It appears, however, to be a less influential cause of this degeneration than typhoid fever. In like manner phlebitis, muscular softening, mental imbecility, inflammation of the parotid gland, followed by its suppuration, cold abscesses, and erysipelas of the head and face, are mentioned as occasional secondary consequences of the disease. It is stated that the cold abscesses always demand the use of the lancet. We have met with a case in which a very large one upon the hip was cured without puncture by means of tincture of iodine freely applied to it, and the administration of nutritious food and tonic medicines.

Dr. Clark adds some new illustrations of the contagious nature of typhus fever. Among others, he furnishes proofs that the dissemination of the patients does not appear to lessen the risk of contagion, and he mentions, in addition to the statement given above, that of the thirty-six resident physicians attached to the Bellevue Hospital from 1847 to 1852, all but nine had the fever.

At the same institution relapses were not uncommon: but the second attack, although as well marked as the first, was never of as long duration as this latter. Additional proof is also furnished by the editor that typhus may occur twice or oftener in the same person.

In reference to the mutual relations of typhus and typhoid fever, the editor quotes several recent authorities on either side of the question as to their identity or diversity. It is at once apparent that those writers who have made a special study of the subject, in a field presenting both forms of disease, subscribe to the doctrine of their being essentially different affections. Such are Drs. Austin Flint, Wilks, and Peacock; while those who have not so examined it, as Dr. Barlow, or who seldom have to study both types of disease, as Dr. Stokes, hold to the doctrine of their identity. The late work of Dr. Huss, from which the editor quotes, tended somewhat to unsettle the belief of the former class, for this eminent writer is disposed to regard the two affections as merely varieties of one disease. On the other hand, we find that a Danish physician, Dr. Magnus, who subscribed to this doctrine in 1847, is now disposed to renounce it, for he tells us "that now certainly many, perhaps the majority are no longer inclined to look upon typhus and typhoid fever as one form of disease." (*Brit. and For. Med.-Chir. Rev.*, Oct. 1856, p. 327.)

Still more recently we have the testimony of French physicians who became acquainted with typhus fever in the Crimean campaign. Thus Dr. Mouchet, an army surgeon (*Médecin Major*), concludes a very interesting parallel of the two diseases in question in these words: "At every step of the analysis proofs have appeared of the diversity of these two affections. Their causes, course, duration, and lesions are so different as to separate them by an impassable barrier, and I am forced to conclude that typhus and typhoid fever are not identical affections." (*Abeille Méd.*, September, 1856, p. 252.)

In like manner at the Parisian military hospital of *Val de Grace*, a fever was observed which had broken out among the soldiers returning from the Russian war. In all, 108 of these patients were treated at the hospital referred to. M. Godelier, who has furnished an account of the epidemic, found that it presented all the characters of the "typhus" described by Hildenbrandt and of the "typhus fever" of British writers, and concludes in these terms: "Typhus and typhus fever are identical diseases, and they differ specifically from typhoid fever." (*Bull. de Thérap.*, LI. 95.)

An explanation of the peculiar bronze or olive colour of the liver in *remittent fever*, according to the observations of Dr. Clark, has been published elsewhere, but is appropriately inserted in the pathological history of the disease contained in this work. He believes the colouring matter to be *sui generis*, and he names it *hæmatoïdin*, because it appears to be formed directly from the blood, and to be deposited as the result of the repeated congestions to which the liver is subject in remittent fever. Its substantial existence he has demonstrated by microscopical observation. He has also shown that it is so slowly removed from the liver in some cases, that a year or more after perfect recovery from remittent fever, it may still be detected in that organ.

In the article on Yellow Fever, numerous important additions have been made by the editor, drawn chiefly from Dr. Blair's history of the fourth epidemic in British Guiana, and from Dr. La Roche's great work. Dr. Clark indulges in a noble encomium on this treatise, of which he says "the spirit and potencies of all the nine hundred and eighty-five treatises of the author's bibliography seemed to have been distilled over and condensed in this capacious alembic." And he rebukes the flippant discourtesy of a writer in the *British and Foreign Medico-Chirurgical Review*, who shuts his eyes to the greatness of the work, because, after a life-long study of whatever has been written on the disease, Dr. La Roche concludes that it is not contagious! But, as Dr. Clark very justly implies in his remarks (p. 534), admitting this conclusion to be established, it does not follow that quarantines against yellow fever should be abolished. Ships may be, and we believe that they sometimes are, foci of *infection;* they may carry in them the cause which is competent to develop the disease under favourable atmospheric conditions, although not a single person

on board of them may have had yellow fever during the voyage from one port to another. Hence we fully concur with the editor in advocating the maintenance of a strict quarantine of *vessels* and *goods* from ports where yellow fever prevails, and quite as fully in his belief that, after proper purification, the passengers by these same vessels may be allowed to pass quarantine limits.

The review just referred to is marked by a very disingenuous spirit, and we shall perhaps be pardoned for citing a few instances in proof of the charge.

The reviewer prints, with all the usual marks of extracts, a number of passages, which, on examination, prove to be not transcripts, but only paraphrases of Dr. La Roche's words. Thus, on p. 288, we have what appears to be a quotation of seven lines, and which is made up of *disjecta membra*, from sentences scattered over two pages (67 and 68) of the original work. On the same page of the review is another passage purporting to be a quotation, and comprising nearly eleven lines. Of these the first six are made up in the manner just described; the capital point, an unusually high temperature (88° to 96°), is not definitely mentioned; and the remaining five lines are not only not in the book, but flatly contradict what is there stated! Again, on the same page of the review, the writer says: "In 1794 the disease was introduced by a vessel from St. Mark;" the author says: "Like the fever of the preceding year, that of 1794 was *ascribed by many* to importation from abroad." According to the reviewer, "in 1797 the fever was *more* general, but less fatal, than in 1793." According to Dr. La Roche, it "was *less* extensive and fatal, doubtless, than that of 1793."

On p. 293 of the review, the writer refers to Dr. La Roche's chapter on the influence of "altitudinal and longitudinal ranges" on the production of the disease, and courteously remarks that "it would be well if he and other writers of the same class would abstain from writing in ambiguous terms on questions which they *do not* and *cannot* comprehend." Then, by way, we presume, of showing that his veracity is equal to his good breeding, he proceeds to furnish what seems to be a connected extract from the work; but one-half of it is to be found at p. 118, of the first volume, and the other half at p. 90, of volume the second! And as if this juggling trick, which appears to be a part of the writer's system of detraction, were not dishonest enough, he transforms the author's phrase "For the same reason, *in part, though not exclusively*, its *geographical* limits," &c., into "for the same reason, *in fact*, its limits," &c.

Many instances similar to the foregoing might be quoted, but in this incidental allusion to the subject we can find room for only one or two more. Our readers will remember the discussion in regard to the origin of an epidemic of yellow fever at Boa Vista, in 1845–6, its source in local causes being maintained on the one hand, and its importation by the Eclair being defended on the other. Dr. La Roche advocates its domestic origin; the reviewer believes, with Dr. McWilliam, that it was imported, and charges Dr. La Roche with resorting "to the discreditable alternative of affecting to doubt the facts, though they were substantiated by the whole surviving population of the island, *by Dr. King, who afterwards went over the same ground*," &c. Now Dr. King, in his account of "The Fever of Boa Vista," says (p. 6) he believed that the disease was "not a contagious fever, but was strictly of local origin;" he further accuses Dr. McWilliam, on whose evidence the hypothesis of its importation rests, of disingenuousness and misrepresentation; is "persuaded that the yellow fever has never been communicated to any one by a specific contagion from the bodies of those labouring under the disease" (p. 8), and, indeed, his whole book is written avowedly for the very purpose of refuting the allegations which the reviewer says were substantiated by his testimony!

The remarks of the reviewer respecting Dr. La Roche's discussion of the question of the contagious nature of yellow fever, are even more discreditable to his candour than any which have been here alluded to. He says (p. 295), "In a chapter on the contagious nature of the disease, a few of the more remarkable facts in support of the doctrine are briefly noticed, and the opinions of the more notorious writers of the Pym school are faintly traced, but in a way which might lead to the conviction that, after all, Dr. La Roche has no settled opinion on the question of contagion. In one place he brings forward

the most unexceptionable proofs of the communicability of the fever, and, as it were, challenges the reader to deny them; in another he ridicules his credulity, and charges the whole fraternity of contagionists with want of candour and truth." After this, it is plainer than ever that the reviewer is incapable of comprehending a judicial investigation of facts for the purpose of eliciting truth. It is clear that he, at least, would have proceeded very differently from Dr. La Roche, and, ignoring all that could be said on the side which he opposes, would have made the most of the evidence which favours a belief in the contagiousness of yellow fever. But Dr. La Roche, as an honest critic, and a philosopher, chose that both sides of the question should be heard, and accordingly he examines it in all its aspects, not "in a chapter," but in *eighteen chapters*, of which *the first two* are devoted to a statement of all that could be adduced on the affirmative side of the question.

The reviewer, in order to justify the above charge of frivolous inconsistency which he brings against Dr. La Roche, professes to convict him out of his own mouth, of being a contagionist, and cites the following, among other passages, for the purpose: "The communication of the disease from the sick to the well, may, in general, be traced in a satisfactory manner." This sentence occurs in a chapter which begins with these words: "The contagious character of yellow fever . . . . and its transmissibility from one place to another, *have been, and continue to be supported* on the following grounds," (vol. ii., ch. xi.) These grounds are stated and discussed in numerical order, and the eighth one is the sentence quoted by the reviewer. But it is the argument of Dr. La Roche's opponents, and not his own, and in due course (ch. xxvi.) he examines and endeavours to refute it. Other contagionist assertions are attributed to Dr. La Roche, and upon precisely similar grounds. Controversialists must henceforth be careful not to state correctly their opponents' arguments, lest they should be charged with admitting them to be true. The reviewer of Dr. La Roche is evidently resolved that no such charge shall attach to him.

But we must return from this unwelcome digression.

The brief and very imperfect summary which has been given of the new matter in the present edition of Bartlett's treatise, will furnish the reader with some idea of its increased value over the previous issues of the work. The profession will, we are satisfied, ratify our judgment that it is the most complete work in any language on the subjects which it undertakes to discuss. The editor has done full justice to the author by the new matter inserted in the text, and, as already intimated, has executed in a kindred spirit the additional bibliographical notices which are appended to each article, and which are so valuable an assistance to all medical scholars who seek to form opinions of their own.

A. S.

Art. XXI.—1. *Transactions of the Medical Society of the State of Pennsylvania, at its Annual Session, held in the City of Philadelphia, May*, 1856. 8vo. pp. 228.

2. *The Transactions of the New Hampshire Medical Society, Sixty-sixth Anniversary, held at Concord, June*, 1856. 8vo. pp. 78.

3. *Transactions of the Seventh Annual Meeting of the Medical Society of the State of North Carolina, held at Raleigh, May*, 1856. 8vo. pp. 63.

4. *Transactions of the Illinois State Medical Society, for the year* 1856. 8vo. pp. 92.

In examining the *Transactions* of our several State Medical Societies, we find a very common complaint made, as an excuse for the paucity of details in the reports presented from the various local bodies of which these societies are composed, of the absence of any epidemic or unusual diseases, and the restriction of the reporters' observations during the year preceding to cases of ordinary affections. This complaint is founded, in our opinion, on an erroneous supposition, that the interest and value of the facts collected and recorded by medical

men consist solely in their bearing upon the etiology, pathology, and therapeutics of diseases, or forms of diseases, which are only of occasional or rare occurrence, or which have not yet gained admittance into our regular systematic treatises. It is important, of course, to record with accuracy the history of every epidemic, with every preceding and concurrent circumstance that may have the slightest tendency to throw light upon its causes, character, prevention, and cure; it is essential, also, that every new form and phase of disease which may be met with should be noted with minuteness and care, and not less so that the results of the use of new remedial agents already in use, should be promptly, candidly, and accurately reported; but not to the exclusion of observations on those forms of disease which the practitioner, in any given locality, or in every locality, is called upon throughout the year, or during its several seasons, daily to encounter. Everything that relates to these is of importance to him. Their characteristics, course, and termination, as they present themselves in different sections of country during the several seasons of the year, and under the varied meteorological conditions of the same season. The modifications produced in them by the age, sex, habits, occupations, and social position of the individuals attacked, and the treatment that experience has shown to be the best adapted to arrest their course, or to conduct them to a favourable termination. Every observation bearing directly or indirectly upon these questions is of value, whether it confirms, or controverts, or modifies, commonly received opinions or practice; and, in the careful collection and recording of such observation, every practitioner, wherever located, and however limited his field of practice, may aid in the progress and establishment of medical truth—whether doctrinal or practical.

1. The annual address before the *Pennsylvania State Medical Society*, delivered at the opening of its session of 1856, by its President, Dr. James S. Carpenter, of Pottsville, Schuylkill Co., is one replete with good sense, and well adapted to the occasion.

The first report comprised in these *Transactions* is that from the county of Berks. It is mainly confined to a report, most valuable and instructive, of the Valley of Oley, in the eastern portion of the county. A beautiful and very fertile spot, well watered and timbered, comprising an area of about thirty square miles, and nearly surrounded by hills which shut out from it the rest of the world. Its population is about three thousand. The valley is underlaid throughout by limestone. The inhabitants are chiefly engaged in agriculture, and are surrounded by all the substantial comforts of life—industrious and temperate. They are the descendants of Huguenots from France, Quakers or Friends from England, and of Swiss and Germans, most of whom left their native lands on account of religious persecution, and came to settle in the wilderness, "where they might find an asylum and breathe a more genial atmosphere of religious liberty."

A curious and interesting question presents itself: What are the prevalent diseases amid this secluded population of the valley of Oley? In the report before us, we have the answer.

"Healthy," it says, "as it should be expected the descendants of such hale pioneers would be, and free as they are from many infirmities, such as gout, which is not known amongst us, and cancer, which is but of rare occurrence, it must be yet admitted that such a formidable disease as phthisis pulmonalis has, in truth, exterminated quite a number of the venerable names of these hearty forefathers. Why this is, it is not pretended to explain; yet we know that rheumatic affections reign here extensively, and if Dr. Thompson's reasonings are correct in this respect, some light is shed upon their cause.

"Intermittent and remittent fevers have for some years been of rare occurrence; the former is now only occasionally met with along the borders of the Manatawny, and not at all on situations more elevated. Remittent seems to have been, for the last thirteen years, almost entirely superseded by typhoid fever. It is this which gives physicians most care, and strikes terror among the people. In its career, it pays no respect to situation, condition, or rank, and attacks alike the rich and poor, whether living among the Alpine regions,

or in the lowly valley. It entails sorrow and distress without the least perceptible regard as to season. The angel of death finds in it a weapon equally potent in the midst of winter, when all is mantled with an Arctic cloak, as well as under the influence of a vernal sun. It has now prevailed in this place for thirteen years, with an occasional abatement, but no cessation; yet the cases for the last few years have diminished in number, and will, perhaps, for once disappear.

"Dysentery has not prevailed, except sporadically, since 1851. It visited the neighbourhood several times, at irregular intervals of thirty-five years, and, in every instance, pursued nearly the same course in its march. The argillaceous districts were especially infected, and all the hills on the plain exposed to the south. A farm-house, situated at the foot of one of these gravel hills, though on the limestone, was, during the preceding epidemic, almost deprived of its inmates by death from dysentery, while, during the latter, that family escaped entirely. During the former, the family were supplied with water from a spring which had its source in the adjacent hill. This was destroyed during the interval by mill improvements, and they were, in consequence, obliged to obtain their water from a deep well in the limestone strata."

This was not the only instance of the same kind, the report assures us, that presented itself.

Cholera morbus, influenza, and all the affections of the mucous membrane of the air-passages, are noticed as especially prevalent during the spring of 1856. In January of the former year, two cases of puerperal fever are noted as occurring. In one of these, the mother suckled her child as long as her strength would permit. It was attacked with erysipelas, and died; the mother recovered. In March, measles became epidemic, after an interval of ten years. It was peculiar in its attacking the grown-up individuals of a family, often allowing the younger members to escape. It continued to prevail until the middle of May. In the fall of the year, pertussis occurred pretty extensively. During the summer, five cases of anthrax are reported in one of the villages within the valley.

This very interesting report was drawn up by Dr. P. G. Bertolet.

The report from Blair County comprises a brief sketch of the hydrography, topography, and geology of the county, with a succinct account of the prevailing diseases of the year 1855. These were mainly smallpox—principally in a modified form—hooping-cough, and mumps—generally of a mild character—typhoid fever, intermittent fever; dysentery, sporadic, and mostly in children; and, in the latter part of the winter, pneumonia, of a more decidedly inflammatory character than that under which it had presented itself for some time previous, requiring free depletion, tartar emetic, and blisters.

In reference to typhoid fever, Dr. Landis, the author of the report before us, who had under his care thirteen cases, all of them occurring in the first half of the year 1855, remarks:—

"The treatment pursued was mild, and rather expectant, a mode of treatment which I have always found more successful in simple typhoid fever than any other. In common phrase, I never attempt to *cure* typhoid fever, but simply conduct the patient through the storm, and not control it. I am convinced this disease will run a definite course in spite of the best directed efforts to arrest it, and, when there are no serious complications present, the less active the interference the better the patient fares. There is, perhaps, no other disease in which meddlesome medication is so pernicious. When important organs are threatened or invaded, these complications must of course be met, and treated on general principles. I would make a single remark with regard to the dietetic treatment of this fever: that I usually allow, from the very outset, light, nutritious food, believing that the powers of digestion and assimilation are maintained with considerable vigour throughout the disease. In this way, that extreme prostration of the nervous stage may be prevented in a majority of cases, which most certainly follows that mode of treatment that is content with merely prescribing slops and empty gruel, permitting the patient to reach the second stage in a state of inanition, to withstand the shock that threatens

to overwhelm the vital powers, and requiring the most potent stimulants to sustain him."

An eczematous disease having resulted, in a large number of cases, from the insertion into the arms of the patients of spurious vaccine matter, obtained from a druggist in Philadelphia, Dr. McKee, of Hollidaysburg, remarks as follows, and we would impress these remarks strongly upon the minds of the practitioners of medicine in all rural districts:—

"Such spurious virus is circulating everywhere, more or less, and it will be the case just so long as country practitioners do not adopt a more independent line of action, by resorting to the original spontaneous vaccine virus. So long as drug stores in a city receive a good, round sum—call it extortion, or what you may—for their diseased scabs, what care they where it goes, or what dire effects accompany it? The responsibility rests not with them, but with the physician whose confidence they betray and abuse. It is high time that each individual in the profession should resolve not to be imposed upon any longer, but return to the original and authentic problem of Jenner, and work it out for himself."

This is a subject, we would add, of serious importance. That there is much spurious and inefficient vaccine matter in use throughout our State, we have become convinced by facts that cannot be controverted. The consequence is, that either a sore on the arm, having no characteristics of the genuine vaccine disease, is produced, surrounded, sometimes, with an extensive, unmanageable eruption, or giving rise to an erysipelatous condition of the limb; or, perhaps, a condition of the arm is produced, having a close resemblance to that from genuine and efficient vaccine infection, but insufficient to so impress the system as to afford it complete protection from variolous infection. The only means to remedy this evil is, a systematic concert on the part of the profession, to renew, at short intervals, their supply of vaccine matter from its original source, and to never make use of any which is not certified to them by competent and reliable authority to be genuine and efficient, and derived from healthy patients on whom the vaccination has pursued throughout a perfectly regular course.

In the report from Bradford County, Dr. Horton gives the history of an interesting case of tumour at the neck of the bladder. A gentleman, sixty-two years of age, of enfeebled constitution from frequent attacks of malarial fevers, very subject to nervous or sick headache, in easy circumstances, and temperate habits, had suffered, for upwards of a year, from occasional attacks of retention of urine; whilst travelling, June 21, 1855, he was seized with one of these attacks, attended with intense pain in the region of the neck of the bladder. Warm fomentations were applied, and, after an hour, the pain ceased, some urine was voided, and the patient was enabled to resume his journey. His urine continued to be passed with tolerable ease until the morning of August 11, when retention and pain again recurred. Fomentations afforded no relief; an effort to introduce a catheter was unsuccessful. The next day, there being a strong pulse and considerable irritative fever, he was bled to a quart, from the arm. Distinct tumour above the pubes. Every attempt to pass the catheter proved ineffectual. Anodyne and relaxing enemata were administered, without effect. The patient continued to suffer excruciating pains, and finally sunk into a comatose condition, from which he was readily roused; on the morning of the 13th, his sufferings were terminated by death.

The following is the account of the *post-mortem* examination, twenty-eight hours after death:—

"The bladder contained about a quart of apparently healthy urine; whole lining membrane inflamed; larger bloodvessels engorged so as readily to trace their course; neck of the bladder enveloped by a tumour three inches in diameter, involving the prostate, closing the passage into the urethra, and pushing up into the bladder with several teat-like prominences. The tumour had an elastic feel, and, when cut into, was found to contain numerous small bodies, from a quarter to a half inch in diameter, which resembled tubercles. The most of them were in a state of disintegration. Some were already a yellowish, cheesy mass; others contained a yellowish, pus-like matter within, the circumference being sound and entire, or nearly so. No small granulations were observed.

Cowper's glands were enlarged, and found to contain a yellowish matter. The abdominal viscera generally appeared in a healthy condition. The examination, however, was confined mostly to the neck of the bladder, and parts near it. The testis of the right side was wanting; a small fibrous mass occupied the scrotum in its place. It is not known how long this had been so. The tumour was somewhat elongated, or rather of a pear form, with the large end upwards, and, judging from descriptions I have read, was not an ordinary case of enlarged prostate."

The following case of poisoning from eating the charged ends of friction matches is not without interest. It is related by Dr. Horton:—

"On the 31st of March, 1856, at 9½ o'clock A. M., I visited M. T., a sprightly intelligent little girl, aged 3 years. Found her very drowsy; extremities quite cold; considerable heat over the stomach and bowels; pulse weak, rather slow; bluish semicircle under each eye; pale around the mouth; breathing easy, with now and then a deep sigh. The child was at meeting the day before, seemed in excellent health, and uncommonly playful. After going home from meeting, while the family were at supper, she went into the bedroom, got up to the match-safe, took out the matches, and was shortly afterwards found playing with them. 'Why, M.,' says an older sister to her, 'have you been eating the matches?' 'Yes,' answered the little girl, playfully, 'they are little snakes, and I have bit all their heads off.' The family thought no more of it, and went to bed as usual. In a short time afterwards, the little girl began to vomit, and continued to do so, at intervals, all night. Her breath smelt strongly of the matches; but still her parents did not become alarmed, thinking the matches were not poisonous, and believing that the vomiting was caused by worms, with which they supposed she had been troubled for some days past. In the morning, about daylight, she passed a large lumbricoid, and this still strengthened their belief that it was worms. I directed warm water to the hands and feet, flannels wet in salt-water over the stomach and bowels, and internally a few grains of calomel, to be followed by olive oil. I left her at 10 o'clock, requesting word to be sent me by 2 o'clock P. M., if she continued to sleep. I heard nothing of the child until the next morning, when the news came that she was dead. Her parents thought she was doing well, though she was very sleepy all the afternoon. She had a small discharge from the bowels between 3 and 4 o'clock; nothing unusual in its appearance; was cheerful, talked plainly and rationally when awake, and said that she was not sick. She continued to vomit occasionally, and had a very strong desire for cold water all the time. Her mother went to bed with her as usual. At half-past ten she seemed bright and smart, kissed her mother repeatedly, and said she felt easy. A little before twelve she was a corpse. She gently slept her life away—no groan, no struggle. I saw the corpse nine hours after death; abdominal distension large, with purple spots; face natural, no bloating.

"The matches were the common Lucifers, such as are put up in small paper cases or boxes, with the dark-blue composition upon the end of them."

Dr. Allen relates a case of entropium cured by the application of collodion, in a female 60 years of age.

"I applied the collodion," he remarks, "upon the eyelid and brow, and was pleased to see it contract sufficiently to draw the cilia from off the eye. A daily application was made for three weeks, by which time she was so far recovered that she could open, shut, and retain the eye at pleasure. The evaporation of the collodion produced a very agreeable sensation of coolness, and, by reducing the inflammation, enabled her again to see with the eye, that had been blind for many years. Six months after this time I saw her, and found that she was steadily improving."

Dr. Allen believes that the application of the collodion will be found sufficient for the cure of most recent cases of entropium, as well as of those chronic cases where the eyelid is not very firm.

Dr. Allen presents the history of three cases of smallpox which occurred in Smithfield, Bradford County, in August, 1852. The first of these cases, and to which the others were traceable, occurred in a little girl, two years and a half old. For several years, the disease had not occurred within many miles of the

vicinity, and the child had not been abroad for several months, nor could any exposure of her to friends or strangers visiting the family be traced in any possible way. It was evidently of spontaneous origin.

The report of the Chester County Medical Society, in common with all the other reports in the volume before us, bears testimony to the unusual healthfulness of the year 1855. No epidemic of moment occurred, and even the ordinary endemic and sporadic diseases appear to have been few in number and mild in character. And such would seem to have been the case also throughout every portion of the State.

From the Report from Huntingdon County we quote the following remarks by Dr. J. M. Gemmill:—

"The most remarkable feature of the diseases of the period alluded to"—autumn of 1855—"was *the blending of the types of remittent and typhoid fevers.* In some cases, the disease, in the commencement, assumed the regular remittent form; the only thing unusual about them being a more frequent pulse during the remission than in simple cases. The ordinary treatment would, in a few days, arrest the periodic exacerbations; but when you were confidently expecting a speedy convalescence, you were disappointed to find the case gliding into one of well-marked typhoid fever, to be protracted perhaps for weeks, and marked by hemorrhage from the bowels, and all the most troublesome symptoms of this lingering disease.

"In other cases, the disease assumed the regular typhoid form in the commencement, and, under the usual treatment for two or three weeks, would change into the intermittent variety, and be speedily cured by a few doses of antiperiodic medicine. In another class of cases, the symptoms of the two varieties were so intimately blended, and the disease so intractable, that great care and close attention were necessary in their management. In these cases, we had great irritability of the bowels, and strongly marked gastric and hepatic derangement, with continued fever and regular exacerbations. They were successfully treated only by strict attention, and promptly meeting the symptoms as they presented themselves.

"Many cases of otherwise regular remittent fever were complicated with hemorrhage from the nose and bowels, and often to a most alarming extent. In fact, every form and variety of fever seemed liable at any moment to be complicated with the most profuse and exhausting hemorrhage; and, altogether, I have never seen so general a tendency to hemorrhages in fevers as during the period spoken of."

In the very interesting report on the endemico-epidemic topography of Lawrence County, by Dr. Leasure, of Newcastle, in that county, we are presented with an instructive account of a malignant epidemic dysentery which prevailed in the county during the summer of 1851. The most successful treatment was found by the reporter to be large doses of opium, with ipecacuanha and calomel, every three or four hours, for one or two days, or until feces strongly tinged with bile were passed, and then followed by a tablespoonful of sulph. magnesiæ in three tablespoonfuls of boiling water, swallowed as hot as the throat would tolerate, succeeded, in twenty or thirty minutes, by copious draughts of hot rice or barley water. On the return of painful dysenteric stools, the opium and ipecacuanha, without the calomel, to be resumed, followed by the sulph. magnesiæ, as before. When, by this means, the bowels have been quickly and fully evacuated, further discharges to be restrained by opiates. In addition, absolute rest in the horizontal position was enjoined, and warm fomentations to abdomen, and occasionally stimulants to extremities. Diet, in the early stages, flour gruel and rice and gum-water; and, as stimulants began to be required, brandy and animal broths, or boiled milk.

"During the present season," the reporter remarks, "we found, in common with our professional brethren all over the country, that intermittent diseases overleaped the ancient boundaries of their endemic habitation, and spread abroad all over the land, so that numerous cases occurred where the people had felt perfectly secure from ague; and now we have a general intermittent diathesis, as well as the typhoid, modifying all our diseases, of whatever character, where they are attended by any serious constitutional disturbance. Nothing is more

common than to find, in any given locality, a case of disease—as, for instance, pneumonia—that will take on an intermittent type in its early stage, and become typhoid, if it last a week or ten days without establishing a well-marked convalescence; and, during the present season, we have, in addition, a strong tendency to jaundice in our fevers, of whatever grade; and, since the first of April, we have had a more general predominance of fever and ague than has occurred for many years in the spring season, but the cases are nearly all those who suffered attacks of the same disease last fall."

Lawrence County, we are informed, has long enjoyed an almost entire immunity from croup and scarlatina. There is there much less disease among children than formerly, and the mortality from tuberculosis has greatly diminished.

In Lebanon County, as we learn from its report for 1855, intermittent fever prevailed to a considerable extent during the year; a majority of its victims were the foreign labourers on the public works, though very obstinate cases were not unfrequently met with in acclimated residents. Typhoid fever was also a common disease during the year. Smallpox, measles, and scarlatina appear also to have prevailed to some extent. Inflammation of the lungs and pleura, parotitis, and pertussis prevailed to a considerable extent during the cold season; while acute rheumatism, neuralgia, and erysipelas are noticed as of more frequent occurrence than usual.

From the Sanitary Report of the Montgomery Medical Society we extract the following remarks by Dr. Francis B. Poley, on the treatment of acute inflammations, such as puerperal fever, peritonitis, pneumonia, meningitis, &c., chiefly by the free use of tincture of digitalis.

"Eight years' experience," he informs us, "has fully convinced me that digitalis is absolutely the specific for inflammatory affections. The cure is absolutely certain, if there be time to get the patient under the influence of the medicine before fatal disorganization has taken place, and this if necessary, can be generally accomplished in twenty-four hours from the time the first dose is taken, sometimes earlier; but occasionally it may require thirty-six or even forty-eight hours to check the inflammation decidedly. A complete cure is generally effected in from three to six days, according to the condition of the inflamed parts when the inflammation is arrested, and other circumstances which I have not time to explain at present."

Dr. P. generally begins the treatment with a copious bleeding, less so, however, than if digitalis were not employed, and rarely has occasion to repeat it. In cases where the inflammation is not very active or extensive, bloodletting will not be necessary.

In order to give an idea of his plan of treatment he supposes a case. A woman of ordinary good health and strength is attacked with puerperal fever, or it may be the case is one of extensive inflammation occurring in a young robust patient. "In such a case," says Dr. P., "I would bleed immediately, then I would give one fluidrachm of tincture of digitalis every four hours." If it be a puerperal case, attended with severe after-pains, he gives at the same time two or three grains of opium, or a full dose of morphia every two or three hours until the pains cease. One dose is generally sufficient. If the fever and soreness very much subside, the dose of the digitalis to be diminished at least one-half, if they entirely disappear it is to be entirely discontinued. "It is very likely that four drachms of the tincture of digitalis will be sufficient to make a decided impression on the disease—there is less tenderness on pressure, the pulse is less frequent and perhaps somewhat irregular, a peculiar paleness about the mouth, perhaps nausea, and a number of other indications of approach of *digitalization*." Dr. P. then gives from 15 to 30 drops of the tincture according to circumstances, every four hours, until the pain and fever have entirely subsided.

"If, however, after the fourth drachm of the tincture is given, the inflammation still continues unabated, I would continue the drachm doses until six or seven are taken, if necessary, and then diminish more or less rapidly according to circumstances. *Alarming and even dangerous prostration may follow the too frequent repetition, or the too long continuance of large doses.* After administering the lesser doses of digitalis, as above directed, until the pain or soreness

and fever have entirely subsided, which may require from twelve to twenty-four hours more, our patient, instead of having a pulse of 130 beats per minute, and a hot dry skin, has a soft, weak, slow, and generally intermittent pulse, perhaps 35, 40, or 50 beats per minute; occasionally, in pale and nervous persons, instead of a very slow pulse, it may be somewhat frequent, but very weak and peculiar; skin cool, pale, and moist; frequently profuse perspiration, no thirst, no pain on pressure, patient feels comfortable, and only complains of more or less weakness and occasional nausea."

"It may not be improper to state that numerous cases of inflammation occur in which a much milder course of treatment is all sufficient, in which bleeding is not required. From 20 to 30 drops of tincture of digitalis, given every four hours for 24 or 36 hours, and afterwards in lesser doses, as before mentioned, are all that is required to effect the cure, which is generally accomplished in two or three days in such cases. To graduate the dose of digitalis to the force of the disease, and the resistance of the system, are considerations of great importance, and require a nice discrimination."

While Dr. P. regards digitalis as *the chief* remedy in inflammations, with the occasional use of the lancet, he by no means rejects the use of other means that may be demanded by the symptoms and condition of the patient.

"I find," he remarks, "no occasion to use mercury in any form with a view to ptyalism, and very rarely indeed need there be any resort to blistering or cupping. I consider it proper to state, in connection with the foregoing, that I almost invariably use hydrocyanic acid in all inflammatory affections; it is soothing and tranquillizing, though transient in its effects. In acute diseases in adults, I generally give one minim every two hours, and if digitalis be given every four hours, it is taken with the hydrocyanic acid every other dose."

"As a general rule," according to Dr. P., "patients that bear bloodletting well, will require larger quantities of digitalis to produce the desired effect, and *vice versa*. In pale, nervous, and excitable persons, the prostration is apt to be more sudden and severe. In such cases, large doses should be repeated with the greatest caution possible. The extent and intensity of the inflammation also have a great controlling influence. In cases of very active and very extensive inflammation, large doses must be repeated in the beginning more frequently than where the inflammation is less active. In females that are nursing, and in pregnancy, it should be given cautiously, and never beyond what is required to produce its proper results."

"A child, one year old, with inflammation of the brain or lungs, may take two or three drops of the tincture, according to circumstances, every four hours, until four, five, or six doses are taken, then it may be proper to give only one or two drops per day."

Dr. P. adds the testimony of Drs. Bigony and Beaver in confirmation of his estimate of digitalis as the chief remedial agent in the treatment of inflammations.

We place the subject before our readers without any comment, having no experience of our own in respect to it to present. With a strong bias in favour of digitalis, as a therapeutic agent of great power that has been too much lost sight of of late years, we nevertheless, respectable and reliable as the source is from which the above testimony in its favour, as a specific in inflammatory diseases, comes, should hesitate in its employment with the freedom and boldness recommended by Dr. P. We have too often seen it when administered dose after dose, with apparently no effect, produce, suddenly, such an utter prostration of the powers of life, that the death of the patient seemed imminent, and his existence could only be preserved by a prompt and unremitting use of the most active diffusible stimulants. It is this known peculiarity of the digitalis which renders its continuous employment to a sufficient extent to arrest the course of any considerable acute inflammation fraught with so much danger. We admit that there is comparatively less danger of the result alluded to, from full than from small doses. We have found, also, the infusion a more manageable form for its administration than the tincture.

The report from the Philadelphia County Medical Society is a very elaborate and most interesting one. It presents a very good general outline of the medical topography of the county, deficient it is true in some of its details, and in

some of its features subject probably to no little criticism on the part of the scientific geologist, but sufficiently full and accurate to throw important light upon the etiology of the more prominent diseases endemic to different sections of the county. On the subjects of water supply, drainage and sewerage, cesspools, street cleaning, animal refuse, ventilation, the dwellings of the poor, intramural interments, and other matters connected with public and especially civic hygiene, the remarks of the reporter, Dr. Wilson Jewell, will be found replete with sound views and practical suggestions.

The subject of meteorology is treated very fully, for the year 1855, the period embraced in the report. Complete mortuary tables are given, introduced by a comparison of the mortality of Philadelphia with other cities in the Union. A brief survey of the prevalent diseases for the year closes the report. From the truly interesting and valuable matter contained in this portion of the report we had marked several items for especial notice; we are obliged, however, to pass them by. The entire report is deserving of a close examination on the part of the physicians residing within the bounds of the county as well as by those beyond them.

An excellent report from Schuylkill County, and a short, but not uninteresting one from Susquehanna County, complete the contents of the present volume of *Transactions*. A very valuable report on meteorology, for 1855, is appended to that from Schuylkill County. It is drawn up by Dr. A. Heger, of Pottsville. If, upon the same plan, and with similar care, observations are made and recorded for each successive year, in every section of the State, we shall be put in possession of data upon which may be based with a degree of confidence some general meteorological laws, and from which more reliable conclusions in reference to the influence which the meteorological conditions and changes in any given locality exert upon the health of the community, the occurrence of epidemics, and the character of the endemic diseases, than we have it now in our power to do.

2. The session of the *New Hampshire Medical Society*, for 1856, was opened by an address by its President, Dr. A. Smalley, on progressive medicine, its relations to society, to the other sciences and professions. This theme is discussed with no little acuteness and force. Dr. S. displays in rapid outline the steady progress which medicine has already made and is still making, towards the solution of the all-important problem—the determination of the best and most effectual means for repelling the onset of disease, or of arresting its progress when it has already become seated in the human organism. He points with great truth and eloquence to the deep interest which all classes and every individual in society has in the progress of the healing art, and in the upholding of those who are engaged in the promotion of that progress, with a brief glance at the relation of medicine to other sciences and professions as they stand in the eyes and estimation of the people and of legislators.

The first report is one on the results of the quantitative and qualitative analysis of homœopathic medical preparations, by Edward H. Parker, M. D., of New York City. Excepting to show the miserable system of deception upon which the pretensions of homœopathy are based, of which we had hoped that every intelligent physician was already sufficiently convinced, we can see but little good that can result from this report. Even could it be brought before the eyes of those of the community who have suffered themselves to be duped by the infinitesimal doses of potentized medicines, administered under the absurd pretence of *similia similibus curantur*, it would scarcely open their eyes to see their own folly and the deception practised upon them. The confident assertion, unhesitating promises and other charlatanic arts of the Hahnemannist will win for him the day with a certain class of the community, in defiance of every attempt on our part to enlighten their understandings, and convince their judgments.

There is some truth in the remarks with which the report concludes. Every means adapted to improve the form in which our remedies are given, so as to render them, while we retain their curative powers unimpaired, as agreeable and as little offensive as possible to the patient, is well worthy the considera-

tion of the medical practitioner. It was an observation of the late Dr. Dorsey to the class of materia medica: "It is almost as important to medicate our patients agreeably as to medicate them rightly. The thoughts of the inelegant and nauseous formulæ patronized by the profession has caused many a poor wretch to defer sending for his physician until disease has attained so powerful a hold upon his system as to render its entire removal difficult and uncertain."

The report which follows is on the ever fruitful subject of quackery. It is replete with sound opinions and manly sentiments, and one or two opportune scraps of advice to the members of the medical profession, which, if taken and acted upon, cannot fail to enhance the dignity and respectability of some, at least, of their number.

A report succeeds from the Committee on Practical Medicine, by Dr. H. H. Mason. It presents no prominent points of interest. It deals altogether in generalities; sound, it is true, and not without deep importance in reference to a correct and successful therapeutics. They can lay claim, however, to but little of originality, and though well expressed, are enforced by no illustrations with which the thinking and observant physician is not familiar.

The next report, that on indigenous botany and materia medica, deserting the legitimate boundaries of its proper province, is taken up entirely by a somewhat laboured recommendation of fluid extracts, as presenting in a pure and concentrated state the active properties of our vegetable remedies—in a form in which they can be readily kept with a lessened danger of deterioration, and administered to our patients with greater ease than in any other. These fluid extracts, when properly and skilfully prepared, present, among others, in the estimate made of them by Dr. Albert Smith, the author of the report, the following recommendations:—

"They are uniform in strength—there need be no experimenting with doses till we reach the desired effect—it may be accomplished at once.

"There is a certainty also about these extracts that is very satisfactory. Given in the doses directed, you will not fail to see the peculiar effects of each article in a very short time, without being obliged to resort to dangerous or heroic doses.

"They offer many advantages from their concentrated form; there is no necessity for large doses. It is certainly a great gain to see the same effects from five drops of the fluid extract as from a drachm of the tincture, or wine of colchicum; or from ten drops of the extract as from a drachm of the tincture of hyoscyamus."

"They enable the physician to make extemporaneously, syrups, infusions and tinctures, that are perfect in character, with a small amount of material."

The report which follows is on inflammation, by Dr. P. A. Stackpole. It is throughout marked by good sense rather than profundity; and though it presents no important addition to our knowledge of inflammation, it has the recommendation of being devoid of any of those startling hypotheses, adopted by many modern writers on the pathology of this and other diseases. Dr. Stackpole very properly repudiates the notion that inflammation is to be viewed in certain cases as a reparative process—"it is always to be considered as a disease, and never to be desired in the healing of any injuries."

3. The opening address of the seventh annual session (May, 1856) of the *Medical Society of North Carolina*, was delivered by Dr. Edward Warren. The theme of the speaker is "the medical profession"—the obligations which those assume who have entered its ranks—their duties to themselves, their colleagues. their patients, and the community at large. And well and wisely, and eloquently is the theme discussed, illustrated, and enforced.

Referring to the occurrence of yellow fever in Norfolk, Va., in 1855, Dr. Warren pictures the terror and consternation which the ravages of the disease spread throughout the community within "the plague stricken city." From whence, he remarks,

"The panic spread to the surrounding districts; strict quarantine regulations were enforced, and the weary outcasts were denied that shelter and protection which common humanity demanded for the unfortunate. The appeals of hos-

pitality, the teachings of religion, the pleadings of charity, and the voice of nature itself, were all unheeded, whilst selfishness issued its unholy fiat, and commanded universal obedience. Death, disease, and wretchedness impelled the fugitives from their homes; whilst the cold, unchristian, and unenlightened teachings of a false philosophy closed hearts and houses against them, and forced them back to their infected homes, to inhale the pestilential vapours, there to die amid scenes of misery. It was at this point that the medical profession entered the lists, and arrayed itself on the side of justice and humanity; it was then that its conservative influence was brought to bear in behalf of the outcast and the sufferer; it was then that its proudest triumph was won, and its noblest monument reared. Disabusing the public mind of the erroneous views it had imbibed in relation to the character and causes of the diseases, and repelling its prejudices in respect to its propagation by contagion from the bodies of the sick. Through its persuasions and teachings, all obnoxious restrictions were rescinded, all obstacles to free intercourse removed, all barriers to the natural flow of generous feelings broken down; hearts were unlocked, houses opened, asylums furnished; rich streams of kindness and charity gushed forth from every bosom, and Heaven smiled as it saw that the reign of selfishness was over, and that humanity had triumphed in the end. But this is only the first chapter in the history of those trying times."

"The demon of destruction was still abroad; the arrows of death were flying thick and fast about the city; the high and the low were falling everywhere; the pride of manhood was no shield against the violence of the malady; the spell of beauty was powerless over the scourge; love could find no asylum for the objects of its solicitude; and all was consternation and despair within the limits of the unfortunate place." "Chained to their posts by an imperious sense of duty and honour, the resident physicians of Norfolk shrank from no obligation imposed by their calling; avoided no responsibility appertaining to their legitimate business, and battled manfully on to the end—either to fall before the pestilence, or to emerge from its gloom with constitutions shattered, health ruined—wrecks of their former selves, and living monuments of their courageous devotion to their profession, and noble martyrdom in the cause of humanity. But the record does not stop here. There were others far removed from the scene of danger, upon whom the sad intelligence came as an electric shock, awakening all the sympathy of their nature, and inspiring them with the generous resolution of hastening to the scene of disaster, that they might lend their assistance towards resisting the fury of the pestilence. Without a prospect of gain, with no hope of reward, with the certainty of martyrdom before them, they left home, family, friends, and business, that they might contribute their sympathies, their prayers, their professional skill, and even their lives to the furtherance of the cause of humanity and the restraint of the terrible scourge. Death spared them not; but new recruits were constantly arriving to fill up the broken ranks of the profession. The malady defied their efforts, and marched on unchecked and unsatisfied, but they lost neither courage nor energy on that account; all was gloom and darkness around them for many long and dreary weeks, but they despaired not of a brighter and a happier day. In the public hospitals; in the mansions of the rich; in the habitations of the poor; with the proud and the humble; among all classes and conditions, wherever the pestilence penetrated, and death sought a victim, these noble volunteers were found ministering to the stricken, closing the eyes of the dying, wiping away the tears of sorrow, comforting helpless innocence, and fulfilling everywhere their highest destiny as men, and their noblest duties as physicians. The pen of history may record brave deeds upon the battle-field; the muse of poetry may lend her sweetest numbers to embalm the memory of those who have courted danger at the cannon's mouth, and met death in the fearful breach; the stately pillar and majestic arch may commemorate the triumph of the conqueror, and young ambition's pulses wildly leap as the story is recounted which tells of the hero's laurels, and the victor's crown, but peace has her victories no less renowned than war; and to those whose labour and glory it has been to defy the power of the pestilence, to tread the path of duty unmoved by the terrors which surround it, to carry medical aid to

the sick and suffering, to offer sympathy and consolation to the broken-hearted, to count all difficulty and danger as nothing when contrasted with the love for their fellow men, and their obligations to their profession—to them a monument is due, whose every stone shall be quarried from the love and gratitude of humanity—whose pinnacle shall kiss the clouds, and whose glory shall go down to the latest generations."

The first report is by Dr. N. J. Pittman. It comprises the histories of two cases. The first of general paralysis from the local absorption of the sulphuret or sulphide of lead. It was in a gentleman, 42 years of age, who, in consequence of an ill-charactered ulceration of the cheek, had applied to it a powder recommended by a female quack for a length of time. It had no effect in curing the ulcer, but finally induced general paralysis. Upon inquiry, the powder was found to consist of a sulphide or sulphuret of lead. Under the effects induced by it the patient in a short time sank.

The second case is one of a double fracture of the thigh, cured with only five lines of shortening. It occurred in a lad twelve years of age, in consequence of a fall from a horse. The fracture was treated by the double inclined plane, McIntyre's splint, for the first day, but on the second, from the inconvenience produced by this mode of management, it was changed for Gibson's modification of Hagedorn's apparatus; under the use of which for about six weeks the fractures were found completely consolidated, with only the amount of shortening indicated, and within three months from the period of the accident the patient had the entire use of the limb, with no apparent evidence of deformity.

The volume closes with a paper on Remittent Fever, by Dr. Frederic Manson, giving "the condensed results of fifteen years' experience in its study and treatment." The disease is described under the three forms of *mild remittent*, being that which the author has generally met with; *grave remittent*, a rare and exceptional form, chiefly witnessed during the year 1844, and in the great epidemic of 1846, and occasionally both before and since these periods; the *adynamic remittent*, a form of the disease which seems to form, as it were, the connecting link between periodical and continued fever, with which latter it is liable to be confounded.

The paper of Dr. Manson is an interesting one, and will amply repay a careful study. The chief object of the author in its presentation to the Society is to advocate the abortive treatment, by the administration of large doses of quinia, so soon as, in cases where the reaction runs high, the system is properly prepared for it. In the grave form he gives it in ten grain doses, with twenty grains of capsicum, in a pint of boiling water, as an enema, every half hour until symptoms of reaction ensue, and then in doses, by the mouth, of from five to ten grains every three or four hours, until thirty-five or forty grains are taken.

4. The *Transactions of the Illinois State Medical Society* open with a report on Practical Medicine, by Dr. Samuel Thompson. Periodic fevers, it informs us, appear to have been more extensively present throughout the State during the year 1855 than at any previous period. It is stated by Dr. Thompson that in six cases of intermittent fever the sulphate of cinchonæ was used by him in place of quinine, and to his perfect satisfaction.

"Indeed, we believe," he says, "that when the object was to give something to prevent relapse, it seemed more efficient than the quinine itself. Our course though was generally to give quinine to arrest the chills, and then prescribe the cinchona and iron to invigorate the system, so as to prevent a return.

"During our constant attendance upon the cases of this kind which occurred during the last summer and autumn, it did not appear to us that they were precisely of the character of ordinary intermittent. In a large number of cases the functional impression was much graver than is usually manifested in those complaints in this region of country; in cases of even a plain uncomplicated tertian intermittent, the patient felt sick all the intervening days. There appeared to be a disposition, in a large number of cases, for the chills to anticipate their hour of return; while in some cases they became each day longer in their continuance. And, again, in other instances, the chill each day be-

came more indistinct, while the fever was more severe and protracted. In the first class of cases, if neglected, the tendency was to run into what is called congestive chill; while, under the second described symptoms, 'congestive fever,' as we would term it, or fever in which prostration and typhoid symptoms supervened, was apt to be the consequence. In quite a number of cases the whole paroxysm, chill, fever, and sweat were jumbled or blended together. In our experience, real rigors or shakes were rare during the past year. There were a number of cases in which the chief complaint was of the great oppression of breathing, of a load like a ton of iron on their stomachs, while a feeble pulse was an almost universal feature of the complaint. Again, the blending together, in some cases, of some of the symptoms of what is called milk sickness, with the more usual effects accompanying the fever, was an interesting circumstance."

Typhoid fever, or a disease bearing in its general symptoms affinity with the disease known under that name, appears, from the report before us, to be a prevalent malady in Illinois. Of its symptomatology, general course, and pathological anatomy, the report before us affords us no data from which any very definite or correct opinions can be drawn.

"The only disease," says Dr. Payne, "which has prevailed as an epidemic to any extent, within the last two years, is acute bronchitis. Many of the adult population, and particularly the males, were attacked with it; it did not prove serious in any of those cases, most of them being able to attend to their ordinary business; the greatest danger was its liability to terminate in pneumonia. It was, however, among children, of a more aggravated form, usually coming on with a chill, or chilly sensations, followed in a short time by high fever, tightness across the chest and down the sternum, great oppression referred to the epigastrium, severe paroxysmal fits of coughing, the mucus occasionally mixed with blood; there was a remission, in most cases, in the fever towards morning. The disease was of various grades, from the mildest to the most aggravated form; the duration of the disease was from ten days to two weeks. It made its appearance the latter part of March, continuing for five or six weeks before it declined. I had quite a number of cases under my charge, all of which recovered, and, so far as I am able to learn, but one, or at most two deaths, occurred among all the cases. The disease was principally confined to Marshall and its vicinity; but few cases occurred in the country. There was nothing very novel in the treatment; calomel was required in some cases where there was much bilious derangement, or the inflammatory action ran high. In those cases where there was a marked remission, quinine seemed to be of the greatest benefit, cutting short some few cases, and materially moderating the violence of others. There were several cases that I believe would have terminated fatally, had it not been for the use of this valuable agent. All of our physicians, so far as I have conversed, made use of it. Diaphoretics, expectorants, and a blister over the sternum were used." "In our own neighbourhood (Edwards and Wayne counties)," says Dr. Thompson, "there has been an almost universal prevalence of bronchial affections, especially during April and the beginning of May; constituting, in fact, a true influenza, in which the affection of the larynx was the most prominent and troublesome symptom; and we are informed the same state of things extended over the counties adjoining."

Variola appears to have prevailed extensively in different parts of the State. The report before us bears testimony to the preservative powers of vaccination.

The report presents some facts which would seem to favour the curative powers of the tincture of the muriate of iron, internally, and the application, externally, of the tincture of iodine in erysipelas, occurring in both adults and children; the tincture of iodine being diluted with alcoholic when applied to the skin in young subjects.

The report contains some remarks on milk sickness. Dr. Haller remarks that the disease occurs most frequently, and is much worse in dry seasons than wet. He considers it to be occasioned by partaking of the milk and flesh of animals who have partaken of a mineral poison. He treats it pretty much as he

would the painter's colic, and with much success. The author of the report objects to Dr. Haller's etiology, pathology, and therapeutics. He agrees with him, however, that it is more prevalent after dry than after wet seasons. In a former part of this report, the author queries whether milk sickness is anything else than one of the forms of periodic fever. A very full bibliography of the disease is given.

The remarks on the epidemic cholera, contained in the report, are loose and unsatisfactory.

The report closes with an analysis of the original department of the *N. W. Medical Journal* for the first quarter of the year 1856, and a communication from Dr. H. Nance, of Lafayette, Stark County, referred to in the body of the report.

The next report is on Orthopædic Surgery, by Dr. David Prince. It is occupied with a few leading arguments in favour of the division of muscles, tendons, aponeuroses, and ligaments for the removal of deformities resulting from perverted muscular action, excepting in recent and exceptional cases, where mechanical force may be sufficient. The correctness of the leading positions of the reporter, is, we believe, generally admitted.

The volume concludes with the annual address of the President of the Society, Dr. N. S. Davis. The subject of this address is the question, "What influence are alcoholic liquors capable of exerting, either in preventing or curing tubercular disease of the lungs?"

Our readers are well aware that, in consequence of the reference, by modern pathology, of tuberculization to defective hæmatosis and imperfect nutrition, as its essential cause, the popular prescription of the present period, for tuberculosis of the lungs, sanctioned by medical men of the highest reputation, is free, nay, severe exercise in the open air, and plenty of beef-steak, with wine and brandy *ad libitum*. The sanction of the alcoholic drinks in tuberculous subjects being supposed to be fully sanctioned by the doctrine recently advanced, that their action, when taken into the stomach, is to retard the metamorphosis of tissue.

The question discussed by Dr. Davis is one of peculiar interest and importance, in view, on the one hand, of the increase of tubercular phthisis in our midst, and the inefficacy of all the various plans of treatment heretofore devised to arrest its fatal progress, and, on the other hand, the relations which alcoholic drinks bear to the great social and moral interests of society, that invest every proposed application of them, even in the treatment of disease, with a fearful responsibility. It is in this light the question is viewed by Dr. Davis, and concisely, but with great force and ability, he examines it. Inquiring first, into the conditions of the human organism which constitute pulmonary tuberculosis, or the predisposition to it, and, secondly, the actual changes in the fluids and solids, or in the properties and functions of the human organism, produced by alcoholic liquors.

We wish we could spare the space to give in full the sound, sensible remarks Dr. Davis makes in reference to these two leading inquiries, but are only able to lay before our readers that portion of the address which comprises the result of his clinical experience in respect to the prophylactic and curative influence of alcoholic drinks in pulmonary consumption.

"During the past twelve months," says Dr. D., "I have kept a careful record of all the well-marked cases of tubercular consumption which have come under my own observation. I have taken special care to ascertain both the present and preceding habits in regard to the use of alcoholic drinks in each individual case. The whole number of cases, so observed and recorded, is 37; of whom 10 were natives of the United States; 24 of Ireland; 1 of England; 1 of France; and 1 of Germany. Of the whole number, 26 were males, and 11 females. Of the whole number only 6 were tetotalers, or such as wholly abstain from the use of intoxicating liquors. Of the remaining 31, six drank alcoholic liquors only occasionally, or at irregular intervals; while the remaining 25 drank either distilled or fermented liquors almost every day, until the pulmonary disease had made such progress that they were compelled to desist, either from want of means to buy them, or from their positively aggravating

the disease under which they were labouring; and six of the number had been, one or more years, what the world calls *habitual drinkers*. If we had taken the utmost care to select cases for the purpose of demonstrating experimentally whether alcohol possessed any power to control the progress of tubercular development, by its continued use through a series of years, we could not have made the experiments more satisfactory than some of the cases embraced in this record."

Two cases are given to show that "a liberal use of beer," with a full supply of nutritious food, will neither prevent the occurrence of pulmonary consumption, nor cure it after it has occurred. In both these cases, a female and a male, there was no evidence of a hereditary predisposition. Two other cases are given, both males, with no evidence of hereditary taint, to show the same fact in reference to the use of distilled spirits.

Dr. Davis supposes the present popular and professional opinions in favour of the use of alcoholic drinks for the prevention or cure of pulmonary tuberculosis, may be accounted for in three ways, namely:—

"*First.* Those opinions are based, with many, exclusively on the delusive idea, still very prevalent, that these liquors are actually tonic or invigorating to the human system under ordinary circumstances. They say, consumption is a disease of debility—alcoholic liquors are tonics—therefore, alcoholic liquors are beneficial in that disease. Like a recent writer in the *Westminster Review*, they reason *logically*. To prove that alcohol was food, he said, 'food is *force*'—'alcohol is *force*'—'therefore, alcohol is food.' Both employ syllogisms, but both forget to prove their premises; and both forget that we might, with just as good logic, say that food is force—steam is force—therefore, steam is food.

"*Second.* The influence of alcohol in exhilarating the brain, in many cases lessens, for a time, the extreme sensitiveness which accompanies some cases of consumption, renders the patient more tranquil, and thereby produces an apparent temporary advantage. Another influence of alcohol, namely, its tendency to diminish the organic actions and excretory functions of the system, enables it in some cases of phthisis, characterized by rapid emaciation, to check that process, and, in some instances, to give an apparent increase of nutrition by retaining more of the fatty matter in the system. But, in every case that has come under my observation, this apparent benefit has been only temporary, the apparent increase of nutrition unhealthy, and the patients, in the end, sink more rapidly than in ordinary cases. In one instance of this kind, a *post mortem* revealed extensive uncicatrized cavities in the lungs, extensive fatty deposits in the liver, and slight fatty degeneration of the muscular structure of the heart. Some have claimed that alcohol, by diminishing the processes of disintegration and waste, performed an office equivalent to the taking of more food. If this were true, opium would be much more efficient food than alcohol; and we should only require some agent capable of arresting disintegration altogether, to enable us to live perpetually without the inconvenience of paying board bills.

"*Third.* The greatest cause of error in estimating the effects of alcohol on the consumptive, is the universal custom of recommending, along with the alcoholic drinks, a thorough change of habits, active exercise, nutritious food, and often a change of climate, and then making no distinction between the effects of the alcohol and the accompanying circumstances. All know that, in many cases of chronic disease, if we give the patients bread-pills, and exact the proper exercise, diet, etc., they get well. They, of course, are willing to swear that the pills cured them; and, I much fear, that in reference to alcoholic drinks, many physicians not only deceive their patients, but themselves also."

D. F. C.

ART. XXII.—*Reports of the New American Institutions for the Insane.*

1. *Report of the (General) Government Hospital for the Insane, near Washington, District of Columbia, for the year* 1855.
2. *Reports of the Massachusetts State Lunatic Hospital, at Taunton, for the years* 1854 *and* 1855.
3. *Report of the Northern Lunatic Asylum, of the State of Ohio, at Newburg, for the year* 1855.
4. *Report of the Southern Lunatic Asylum, of the State of Ohio, at Dayton, for the year* 1855.
5. *Report of the Western Lunatic Asylum, of the State of Kentucky, at Hopkinsville, for the year* 1855.
6. *Reports of the Tennessee Hospital for the Insane, near Nashville, for the years* 1852, 1853, 1854, *and* 1855.
7. *Reports of the Mississippi State Lunatic Asylum, at Jackson, for the year* 1855.
8. *Insane Asylum of North Carolina.*
9. *Proceedings towards the Construction of Asylums in Michigan, Alabama, Iowa, Wisconsin, and Massachusetts.*
10. *Reports of the King's County (New York) Lunatic Asylum; the Hamilton County (Ohio) Lunatic Asylum.*
11. *Western Pennsylvania Hospital at Pittsburg.*
12. *Private Establishments for the Insane.*

IT has been our wish, for many years, to present to such of the readers of the *American Journal of the Medical Sciences* as are interested in the subject of psychiatry, all the facts necessary to a complete and comprehensive—although it may not be of a detailed—history of the progress of the scheme for the melioration of the condition of the insane in the United States of America. As new institutions have been established, they have been duly recorded; as soon, at least, as we have received official information from them. Every report which has reached us from the older institutions has been chronicled, together with such facts as it may have contained indicative of progress in the method of treatment, or otherwise illustrative of the general subject of mental alienation.

Within the last ten years, however, the sphere of action in regard to institutions for the treatment of the insane has been so greatly expanded, and new hospitals have been so rapidly established, that we now find ourselves somewhat behind the times. It is proposed, in this article, to remedy that defect. It is intended to place our readers, as nearly as possible, *au courant* in regard to the subject. The reports from recently-founded, regularly-organized institutions will first be passed under review. Those from some other establishments will be noticed, and, before closing, an attempt will be made to give a general view of the insane hospital scheme, by a tabular synopsis.

1. In August, 1852, the Congress of the United States made an appropriation of one hundred thousand dollars "for the purchase of a site, and the erection, furnishing, and fitting up of an asylum for the insane of the army and navy, and of the District of Columbia." In the following October, Dr. Charles H. Nichols was appointed, by the Secretary of the Interior, as superintendent, with authority to select a site, and conduct the prosecution of the work upon the establishment.

Several farms within the district were examined, and the one believed to unite the greatest number of advantages purchased, for the sum of twenty-seven thousand dollars. It contains one hundred and ninety acres, and is situated "on the southeast side of the eastern branch of the Potomac, nearly due south from the Capitol, and about two miles from it in a direct line." The land rises rapidly, though not precipitously, from the shore, until it attains the height of about one hundred and seventy feet from the surface of the river, at high tide, and then extends backward in a broad plateau, slightly undulating, and free

from stone. The declivities are broken by ravines, some of them natural, others produced by the flow of water; some cultivated, others covered with their original forest. More than one hundred acres of the land is under cultivation, and several peach-orchards are upon the place, producing, in some seasons, no less than a thousand bushels of that delicious fruit.

The site is eminently adapted to the purpose for which it has been selected. It is secluded, yet easily accessible. It is elevated and salubrious. It is easily drained, and affords, from springs, an abundant supply of water. The land is fertile, and easily cultivated. The surface presents uncommon facilities for almost every variety of landscape-gardening, from the smooth and level lawn to the wild and picturesque ravine.

The hospital is situated upon one of the most elevated points of the plateau, about twenty rods on the north, and forty rods on the west, from the commencement of the declivity towards the river. Its base is nearly upon a level with the eaves of the Capitol. The panorama from it comprises almost the whole of each of the cities of "Washington, Georgetown, and Alexandria, the heights north of the two former, the Virginia hills on the south, and the Potomac and the eastern branch for several miles." Few views are more diversified or more beautiful. "The building itself will be one of the most conspicuous ornaments of the District, and will be visible to more people, and from more points, than any other structure, excepting, perhaps, the Capitol, and the Washington Monument when completed." Its general plan is linear, modified from that of any previously constructed edifice of the kind, but consisting of a central building and two opposite wings. It is of the castellated Gothic style of architecture. Its whole length, in a direct line between the extremities of the wings, is 720 feet. Each wing is divided into four sections. The first section unites with the central building at the middle of its side, through the medium of floors and lattice-work, permitting free ventilation between the two.

The front of the second section is eight feet further back than the rear of the first. The front of the third section is on a line with the rear of the second. The fourth section is placed at right angles with the third, and, of course, parallel to the central building. The lapping of the second section upon the first, and of the third upon the second, is 36 feet. The first and the second sections are each 42 feet wide, with rooms upon either side of a central corridor. The third section is 30 feet wide, with rooms upon but one side of the corridor. The fourth is 74 feet long and 40 feet wide, with rooms upon either side of the corridor. The first and the second sections are three stories in height; the third and the fourth sections but two stories above the basement. At the union of either section with the next adjoining, there are projections in front, which break the monotony of the façade. At the union of the second section with the third, this projection is elevated into a tower one story higher than the second section. The ceiling of the first story is twelve feet from the floor; that of the second, fourteen feet; and that of the third, twelve feet. The essential difference between this plan and that of the hospital at Trenton, consists in the placing of each successive section at a greater distance back of the one which precedes it. This more effectually destroys the uniformity of the façade, affords greater facilities for ventilation and the introduction of light, and renders the internal construction, in some respects, more convenient. The building is warmed by hot water, the radiating tubes being in the basement. It is lighted by gas, which is made on the premises, and supplied with water by forcing-pumps, moved by a steam-engine in the laundry.

Most of the wood-work within doors is finished without paint; being rubbed down and varnished. Each ward takes its name from the wood with which it is finished. Thus, there is the Beech Ward, the Sycamore Ward, the Oak Ward, the Poplar Ward, the Maple Ward, the Walnut Ward, the White Ash Ward, the Yellow Pine Ward, and the Pitch Pine Ward. It is intended, if a sufficient number of workable American woods can be procured, to finish no two wards throughout the whole establishment with the same kind.

The rooms for the most violent class of patients are constructed in nowise differently from those intended for the more quiet, with the single exception

that, as it becomes necessary, an internal shutter of strong wire gauze is attached, as a guard to the window. In the apartments for patients, the windows are made in the ordinary style of those for dwelling-houses. Both sashes, however, are of iron, and the panes of glass but six inches wide by about thirteen in length. Neither sash will open more than five inches. The two are connected by a peculiar contrivance of levers, placed in the window-head, so that when the lower one is raised the upper one falls. The apparatus for this movement is entirely concealed, and appears to be less liable to disarrangement and breakage than that of pulleys and cords.

Two hundred feet in the rear of the extreme section of each wing, there is a "lodge for colored patients," two stories in height, 52 feet in length by 35 feet in width, with a central projection, upon both the front and the rear, of 8 feet from the façade, and 25 feet in length. The entrance, the stairs, and the dining-room are in this projection of the front, and an exit into an airing-court, and an associated dormitory, in that of the rear. This dormitory is sufficiently large for four patients. The remainder of the floor is occupied by an attendant's room, a bath-room, separate dormitories for six patients, and the central gallery or corridor. The second floor is arranged like the first.

In the report transmitted by Dr. Nichols to the Secretary of the Interior, on the 1st of October, 1855, we are informed that the institution was organized on the 1st of January, 1855, and the first patient admitted on the 15th of the same month. On the 22d of January, and again on the 12th of March, patients were transferred to this hospital from the institutions in Baltimore. They were removed under the immediate supervision of Dr. Nichols. The number of them was fifty-one.

	Men.	Women.	Total.
Patients admitted to June 30, 1855 . . .	26	37	63

"Upwards of five-sixths of these patients had resided in one or the other of the Baltimore institutions for periods varying from fourteen years to a few months, the average duration of such residence having been upwards of five years.

"Only five had been insane, at the time of admission here, for a less period than one year, and the average duration of the insanity of the remaining fifty-eight has, at this time, been not less than six years."

Of the five recent cases, three have recovered, and it is thought that one of the other two is curable. Of the chronic cases, only two "hold out the least prospect of restoration." It is thought that, by the close of the year 1855, there will be as many as one hundred incurables in the hospital. "After that, a considerable proportion of the cases admitted will be recent, and I see no reason why as many restorations, in proportion to the admissions, may not be expected here as under the most favorable circumstances, while the recoveries in proportion to the numbers resident must continue to be very small." In the report for 1854, it was estimated that there were "ninety-four unfortunates actually in hospitals, jails, and private custody, who will be entitled to the benefits of the institution according to law;" but, in the report for 1855, it is stated that "the whole number having claim to the benefits of this institution is considerably greater than that given in the last report."

Dr. Nichols thinks that the whole building will be necessary for the accommodation of patients as early as the year 1859. The amount already expended is $171,341: of which $27,000 was for the farm; 3,000 for wharf, aqueduct, and reservoirs; $18,600 for wash, gas, and engine-houses; $12,000 for lodge for colored patients; and $110,721 for that part of the hospital building which is completed. This completed portion incloses 829,390 cubic feet. The portion to be erected will inclose 1,610,886 cubic feet. Its estimated cost is $214,784.

It is proposed to inclose an area of forty acres, including the buildings, by a brick wall 9½ feet in height, "as a condition necessary to the privacy, exercise, and industry of the patients." It will run mostly below the brow of the hill, not within sight from the hospital. Its estimated cost is $13,872.

2. In pursuance of an Act of the Legislature of Massachusetts, approved in May, 1851, authorizing the erection of a second Hospital for the Insane in that State; a farm of one hundred and thirty-three acres, in Taunton, was purchased; buildings erected thereupon, and the whole property delivered by the commissioners into the hands of the trustees in February, 1854. The expenses were defrayed by legislative appropriations to the amount of one hundred and fifty-four thousand dollars, and a donation of about thirteen thousand dollars, part from the town of Taunton, and part from some of its inhabitants.

The farm "is in an elevated and airy situation, covered here and there with wood, and bordering upon a pond and river, which add not a little in variety and beauty to the view." It is said that the building is "a handsome and well-built structure." Its general plan is identical with that of the hospital at Worcester, consisting of a central portion and two wings, with "return wings" joining the latter at a right angle at their extremities, forming three sides of a parallelogram. A third wing, in the rear of the central portion, is of equal length with the return wings, and parallel to them. The internal construction of the hospital was, in one respect, far behind the times. The building was intended for two hundred and fifty patients, and there were no less than forty-two rooms "built of stone, and brick, and iron, and finished throughout with a view chiefly to strength. The walls were of brick, sixteen inches thick, and were whitewashed on the brick. They were placed along the centre of the wing which was devoted to them, having a narrow passage-way before and behind, and consequently having no windows opening to the outer air, and few of them any view but of the same gloomy, white prison walls. A small opening in the rear of each cell, guarded by strong iron bars, answered for a window; the doors were narrow, and made of the same material (we suppose that the author means *iron*, although the language does not convey that idea), each provided with two ponderous and formidable looking locks. By the side of the doors was a small aperture, just large enough to pass in food. The floors in the two upper stories were of wood. In the rooms of the lower story, which were probably designed for filthy patients, and such as should refuse to wear clothing, they were of stone, made sloping; and terminating in front of the cells in a stone gutter for the convenience of washing them out. The stones also were heated to afford warmth to the naked inmates who were expected to rest upon them."

These were called, *par excellence*, "strong rooms." Verily, the term was no misnomer. It is remarkable that such relics of antiquity should have been preserved, at this day, in Massachusetts. It is astonishing that there should have been so great a retrogression from the true *status* of psychiatry in the Eastern and the Middle States. But man is almost ever conservative. He listens to tradition with the ear of faith. He clings tenaciously to precedent, be it evil or be it good—most especially if it be evil. But, it matters not, now, in reference to the case before us. Miss Dix commenced an intellectual and moral bombardment of the "strong rooms." Dr. George C. S. Choate, who was appointed Superintendent of the Hospital, brought his forces to the attack. Strong as were the rooms, they were not sufficiently so for self-preservation. They were razed, demolished, "not one stone left upon the top of another," and superseded by others, constructed in the ordinary style. To meet the expense of this and other improvements, and to supply the house with furniture, the legislature made appropriations amounting to thirty-two thousand dollars.

The hospital is heated by steam, and lighted by gas. "Scarcely any other single thing," remarks Dr. Choate, "contributes so much to the cheerfulness of a hospital, as gas. To the long winter evenings, which, in hospitals lighted in any other way, must be seasons of gloom and weariness, the brilliantly lighted halls impart a comfort which brightens the desponding heart, and, in spite of themselves, cheers into mirth and sociability many a morose and ascetic soul."

"On the 7th of April, 1854, the first patient was admitted, and, in the short space of eight weeks from that time, the hospital had received the whole num-

ber of patients for which it was designed. The rapidity with which it was filled is probably without a parallel in the hospital history of this or any other country." We have already described the exodus from the Worcester Hospital of 210 patients (Dr. Choate says 211), who were transferred to this establishment; a large portion were "old, helpless, and demented."

	Men.	Women.	Total.
Patients received from April 7 to Nov. 30, 1854	156	174	330
Discharged, including deaths . . .	48	43	91
Remaining, Nov. 30, 1854	108	131	239
Of those discharged, there were cured .	15	21	36
Died	14	10	24

The average duration of insanity in the cases from Worcester was 6 years and 73 days; that of all the others, 2 years and 35 days. Consequently, a large number of cures could not be expected.

Causes of Death.—Phthisis, 6; dysentery, 6; maniacal exhaustion, 3; apoplexy, 3; fever, cancer of the uterus, inanition, old age, anæmia, and gangrene, 1 each.

"During the months of August and September, dysentery of rather a bad form prevailed in the house to a considerable extent; though, perhaps, it was not more prevalent than it was in the neighbouring town and adjacent places. * * * * The cholera, several cases of which occurred in our immediate neighbourhood, passed us by unscathed."

Among the patients is a boy but six years of age. The nature of his case is not mentioned in the report.

Age at the time of Attack.—Under five years, 2; between five and ten, 1; ten and fifteen, 5; fifteen and twenty, 28; twenty and thirty, 119; thirty and forty, 81; forty and fifty, 44; fifty and sixty, 24; sixty and seventy, 8; seventy and eighty, 3; unknown, 15.

We fully believe that it will yet be demonstrated that the greatest liability to insanity, in this country, is in the decennium from twenty to thirty years.

Dr. Choate remarks that the Irish already constitute nearly one-third of the whole number of patients, and that "it is a well-ascertained fact that, in our hospitals, a much smaller proportion of Irish patients recover, than of Americans." He attributes the large percentage of insanity among our Irish population, to disappointment of the exalted hopes and expectations with which they immigrate, homesickness, and the physical change wrought in their constitutions by the voyage and change of climate.

In his comments upon the "strong rooms," above mentioned, and the results of their demolition, he says: "During the eight months, since this hospital was opened, there have been received every class of patients. Of the 211 who came from Worcester, no selection was made in our favour; of the 119 received since, it is fair to suppose that the average share were troublesome patients; and, if not, it would be exceedingly improbable that there should not have been a few, at least, who would try the system thoroughly. *But not a single case has occurred to make us feel the need of anything different from the ordinary room.* Vigilance, attention, and kindness are stronger than walls of stone or bars of iron. * * * * * The only mechanical means of restraint made use of in this hospital, are the ordinary leathern strap passed around the waist, with leathern rings attached for the wrists, and the camisole. The former we use with male patients, when required—which is seldom, only one man wearing them at the present time, and often none being in use in the house. The latter is now the only means used with females. It consists of the ordinary waist, made of some strong materials, with the sleeves made longer than usual, and sewed up at the ends. The arms are then folded across the chest, and the ends secured behind. We seldom have more than four patients who wear this dress."

Of the patients, forty of the men have worked on the farm, and ten in household employments; and about thirty of the women have been occupied in the

work of the sewing-room, the laundry, and the kitchen. Two evenings of the week are devoted to a singing-school; one to an exhibition of views with the magic lantern, and one to a social party. A bowling alley is in process of construction. Religious exercises are held on the Sabbath, as well as upon every evening of the week.

The changes in the population of the hospital during its second fiscal year, are shown by the following schedule:—

	Men.	Women.	Total.
Patients on the 30th November, 1854 . .	108	131	239
Admitted in course of the year . . .	83	84	167
Whole number in course of the year . .	191	215	406
Discharged, including deaths . . .	65	79	144
Remaining Nov. 30, 1855	126	136	262
Of those discharged, there were cured .	34	36	70
Died	17	21	38

Died of phthisis, 5; maniacal exhaustion, 4; apoplexy, 4; softening of the brain, 4; marasmus, 4; anæmia, 2; disease of liver, 2; erysipelas, 2; diarrhœa, 2; dysentery, fever, old age, gangrene, epilepsy, paralysis, disease of heart, peritonitis, and chorea, 1 each.

"The two deaths from erysipelas were isolated cases, occurring soon after the admission of the patients, and do not indicate any local cause here for that terrible malady. * * An almost entire immunity from acute disease has been enjoyed."

"Among the deaths were those of a mother and her daughter. The latter entered the hospital, April 28, 1855, with softening of the brain, and died May 25. None of her family or relatives had ever been known to be insane before. On the day before her death she was visited by her mother, a lady of seventy years, who was deeply affected at the sight of her daughter's condition, and from that moment began to exhibit unequivocal symptoms of insanity. The unfortunate termination of the disease of the first, probably led her friends to retain the second as long as possible at home; but, on the 2d of July, the latter was placed under our charge. At first, exhibiting the usual symptoms of subacute mania, she soon became quiet, and gradually pined away, without any apparent bodily disorder, and died about two months after her admission. * * * A son, the only surviving child, who visited the mother during her illness, and was extremely anxious and unhappy about her, was soon afterwards attacked with the same mysterious disease. That there was an hereditary taint in this family, though it may have lain dormant through one or two generations, there can be little doubt."

The following remarks have a bearing upon the practical operation of the substitution of ordinary apartments for the "strong rooms," above mentioned.

"Not a case has occurred, during the past year, in which we have felt the slightest necessity for anything different from our present arrangements for the safe keeping of any *insane* person committed to our charge. In one case, that of a homicide committed from the State prison, and who was exceedingly ingenious in his efforts to escape, and highly dangerous, it was thought best to add some little defences to the door and window of his room."

Upon the true mission of a hospital for the insane, and the evidences that such mission is in progress of fulfilment, Dr. Choate says: "Much the larger portion of the inmates of this and every other lunatic hospital, are incurables, many of them lingering year after year in its halls; and, unless all proper means have been made use of to secure their comfort, to calm their excitements, to bear with patience the outpourings of their diseased passions, to beguile their long, weary hours, and to improve, as far as may be, their habits and thoughts; no hospital, however large may be the proportion of its cures, can be said to have done its whole duty. The good government and successful career of a hospital are seen best in little things, in daily cares, each trifling in itself, but, in the aggregate, deciding the comfort or misery of the household; in the patience with which the daily vexations are met and borne, most

of all in the persevering spirit of kindness and gentleness which will overcome the most ferocious and savage minds."

He thinks that to form a correct opinion of a hospital, we must found our judgment upon the degree of attention paid to the incurable, the furious, and the filthy.

If these "are well cared for; if seclusion and mechanical force are the exception instead of the rule, and are never used to save trouble, but only when deemed beneficial; if means are taken to employ them, although their labour may be of no value, and to amuse them, although they are incapable of affording any gratification in return; if pains are taken to treat them with courtesy and attention, although the only return may be ingratitude, then it is probable that the former class (the curables, and interesting cases) also are well provided for."

For the proper care of the incurables, he would have them furnished with "pleasant dwelling-places; the comforts of life, as far as they can appreciate them; as much freedom of action, and admission to the air and light of heaven as possible; * * * more numerous attendants, and those of the best character and adaptedness to their business;" * * * and the advantages which may accrue from a "more frequent and closer inspection of the supervisory power."

This is all very well; but, in our opinion, Dr. Choate does not carry his scheme sufficiently far. The patients in question, before they will be, or can be, properly treated, must be subjected to the disciplinary, hygienic, and educational exercises of a school for the idiotic, as we have already suggested in one of our former notices of reports.

3. The Ohio State Lunatic Asylum, at Columbus, has for several years been entirely inadequate to the demand for that kind of hospital accommodations which it was designed to furnish. Hence, a movement was made with the object of increasing such accommodations; and it was at length decided, by the Legislature of the State, that two new hospitals for the insane should be established. Appropriate buildings have been erected, and the two institutions are now in operation. They are designated by the titles "Northern Ohio Lunatic Asylum," and "Southern Ohio Lunatic Asylum."

The Northern Ohio Lunatic Asylum is at Newburg, near Cleveland. The report contains no description of it further than the assertion that it was designed for one hundred and twenty-five patients, but will accommodate one hundred and fifty. The superintendent, Dr. L. Firestone, took charge of the establishment on the 1st of December, 1854, and the first patient was received on the 5th of March, 1855. From that time until the 15th of November, the end of the fiscal year, 164 patients were admitted, of whom 66 were males, and 98 females. Discharged, recovered—males 17, females 25; total, 42. Died—7 females. Remaining—47 males, 65 females; total, 112.

"The intention, when opening the building," remarks Dr. Firestone, "was to receive no patient whose insanity was of longer duration than two or three years; but circumstances presented themselves rendering it impossible to adhere strictly to the rule. * * * The great design of the Asylum is to cure patients, and, as a general rule, none but those considered curable, should be received."

"One patient was only nine years old—a very unusual age to be afflicted with loss of reason. This was a little girl who had an attack of typhoid fever, the disease doubtless being an exciting cause of her insanity. She was brought here emaciated, raving, and furious. * * * I am happy in being able to state that the little patient has recovered."

"The last summer (1855) appeared to be favourable for the generation of malaria, and in consequence the country around had many cases of chills and fever, remittent fevers, and many cases of marked intermittents. The inmates of the building did not wholly escape this cause, but at the same time the diseases were easily controlled by the appropriate remedies."

In his remarks upon the causes of mental disorder, Dr. Firestone draws the following picture. Our readers can judge of its merits in regard to truthfulness:—

"How many instances we have of young girls being denied the exercise they require for the full development of their systems. They are cooped in poorly ventilated apartments; the sun must not strike their delicate hands—must not tinge the skin. The more nearly they can be made to approximate the appearance of a corpse, the more beautiful in the estimation of some mothers. Nature cannot paint their handsome cheeks, but the mother can, with some far-famed rouge. They must not work, as it would, in their estimation, be a mark of great indignity; they must not assist their mothers in the affairs of the household, as it would be exceedingly vulgar; they must not wash, or mend their father's clothes, or cook his victuals, as it would roughen the skin upon their soft, tapering fingers, and soil their lily-white hands. If they venture out of doors, it must be with bare necks, well powdered; thin, delicate shoes, and a whalebone strait-jacket to cramp their lungs. For their daughters to wear warm, thick clothing, would be a species of rudeness intolerable to the very sensitive mother. No wonder we see so many pale and sickly faces; no wonder our asylums have so many inmates."

He thus gives his opinion of the so-called "spirit-rappings," to which the insanity of eleven of the patients was attributed:—

"It is to be deplored that every good man, every well-wisher of his race, should be under the necessity of making war with another, not physical, but moral contagion, that has lately sprung into existence, misnamed *spirit-rapping*. The natural causes of disease are sufficiently numerous, without adding that which has no foundation in reason, no reality—an *ignus fatuus* that is doing more harm in a moral point of view than any system of infidelity, any other imposture that has of late years—and may I not say that has ever infested the moral world? * * * The fact that men of sense and character will run after such a will-o'-the-wisp is one of the most striking exhibitions of moral obliquity which the history of fanaticism can furnish. It is to be hoped that in this age of general intelligence, education, and gospel light and privileges, this monster will soon be swept into oblivion, and only remembered in sighs and repentant tears by those who have been so unfortunate as to have become its dupes."

The subjoined extracts illustrate some parts of his system of moral and of medical treatment:—

"In the management of patients, we have uniformly endeavoured to treat all with the utmost kindness. * * * A raving maniac can be more securely bound by acts of benevolence and kindness than by any other means of restraint. A smile is more potent in quieting a madman than a frown. Patients are often brought to us tied with ropes, and secured with handcuffs and chains. They were said to be furious and unsafe if not thus secured. We have invariably taken off all such means of restraint, and have thus far been able to quiet them by a good shake of the hand, a hearty welcome, and the assurance that they were among friends. We have never as yet been under the necessity of repenting our course.

"The medical treatment has varied with the peculiarities of each individual case. * * * As a general rule, we give tonics and anodynes. These, perhaps, form a leading prescription. Most patients are more or less reduced, and need support. We, as yet, have not drawn an ounce of blood from a patient under treatment, and something very special must occur as a complication, or we must have a radical change in our views as to the correct treatment, if we ever will.

"It will not, I trust, be considered out of place to allude to an error that has from some cause been adopted by many physicians in the State. It is no uncommon thing for patients to be bled till they are almost bloodless, before being brought to the Asylum. A more fatal error could not be committed for the welfare of the patient. In such cases we invariably have trouble. We endeavour at once to restore the strength and tone of the system. It takes a long time to do this. Such cases almost invariably linger a long time before they recover. We have, as yet, been able to discharge but one patient thus treated before being brought to the Asylum. * * * Before concluding this

subject, permit me to allude to puerperal mania. As far as I can learn, a vast majority of such cases are bled profusely. I think I may safely say that four out of five are thus treated. *Fatal error!* This form of mental derangement, if properly managed, is favourable, and has perhaps as large a percentage of recoveries as any other form. Those treated by bloodletting linger a long time, and a large proportion never recover their reason. It was a remark of Marshall Hall, that on visiting a case of puerperal mania, he would ask if the patient had been bled; if the answer was in the negative, he would reply that it would probably get well; if in the affirmative, it would probably die."[1]

4. The Southern Ohio Lunatic Asylum is situated one mile and a half southeast of the city of Dayton. It is upon an eminence commanding a fine view of the surrounding country. Its general plan is linear, comprising a central building with a wing upon either hand. The former is four stories, the latter are three stories high above the basement. The stories average about fourteen feet in height. The whole length of the building is 328 feet. The central part projects 42 feet in front of the façade of the wings, and nearly as far beyond the rear wall of the latter. At the connection of the wings with the main building there are glazed doors, protected by iron gates, in both front and rear, for the purpose of promoting ventilation. At the remote extremities of the wings there are prejections in both front and rear. The former gives space for a large parlour for the patients; the latter, for that important appendage, an infirmary. The dormitories of the patients are upon both sides of the corridor which traverses each wing. The bakery and the wash-house are in a building 131 feet in the rear of the central edifice, and connected with it by an inclosed walk.

The building is heated by steam, and lighted by gas, which is manufactured on the premises. A spring, 1,100 feet distant, discharges about one thousand barrels of water per day. The supply for the asylum is brought by iron pipes into cisterns, and thence forced by steam into tanks in the attic of the central building.

The establisment furnishes accommodations for 150 patients. It was opened, under the superintendence of Dr. Joshua Clements, on the 1st of September, 1855. From that time to the 15th day of November, the close of the fiscal year, 59 patients, of whom 30 were men and 29 women, were received. Eleven were discharged, of whom 4 were restored to health. There were no deaths. Of those who remained, many were incurable, including chronic cases and epileptics, some of which had been in other asylums from three to five years.

In reference to the etiology of mental alienation, Dr. Clements says: "A brief residence with the sufferer often reveals the true cause. We have two cases of acute mania, supposed to be brought on by the intemperate use of liquor. Previous to the attack, they were noted for their sobriety. One, after the loss of his fortune through the bank crisis of last winter, the other from disappointed affection, suddenly became intemperate drinkers. The one after nine, the other after fifteen days of protracted drinking, were placed under our care." Since the publication of the report, Dr. Clements has left the institution, and been succeeded by Dr. J. J. McIlhenny.

5. The State of Kentucky has founded a second institution for the insane. It is at Hopkinsville, and is technically known as the Western Lunatic Asylum, while to the title of the old establishment at Lexington the distinguishing adjective *Eastern* is prefixed. We have met with no history of the origin and progress of this new asylum prior to the time at which it was opened for the reception of patients. This was on the 18th of September, 1854. The farm connected with the institution, contains 385 acres. In his report for 1854–55, the superintendent, Dr. S. Annan, gives the following general description of the building: "The entire front is 370 feet, and two wings extend back at right

[1] Since the above was written, Dr. Firestone has been superseded by Dr. R. G. Hopkins, as superintendent.

angles 190 feet. It is four stories high, including the basement, and will accommodate 350 patients. * * * While solidity and durability have been chiefly regarded, appearance in the style of architecture has not been overlooked. The magnificent portico fronting the public highway, with its six lofty columns and its graceful entablature, is in the highest degree ornamental. * * * The arrangements for ventilation are very complete. A ventilating flue passes from every sleeping-room to ventilating cupolas on the roof. A strong current of air can be forced through the lattice-work of these cupolas, by means of heat produced from a range of steam-pipes inclosed in a chamber under each cupola. It is designed to warm the building by steam." In another part of the report it is stated that "the asylum is not yet one-third finished."

The subjoined summary shows the movement of the population from the time of opening until the 31st of December, 1855:—

	Men.	Women.	Total.
Patients received	65	48	113
Discharged, including deaths . . .	21	11	32
Remaining	44	37	81
Of those discharged, there were cured .	4	4	8
Died	13	4	17

Of the patients admitted, 15 men and 14 women were transferred from the Eastern Asylum.

Causes of Death.—"Epileptic convulsions (combined in two cases with diarrhœa, in one with acute dysentery, and in one with pleuro-pneumonia), 6; pulmonary consumption, 2; chronic diarrhœa, 2; malignant pustules and erysipelas, 1; cholera morbus, 1; tabes mesenterica, 1; congestion of the brain, 1; apoplexy, 1; chronic dysentery, 1; fever, sequel to cholera, 1.

"Owing to the hard limestone water and the insufficient supply of vegetable food, especially of potatoes, during the winter of 1854–55, there was a great deal of disease in the house. Diarrhœa was very troublesome, and towards the end of the winter the scurvy made its appearance, and rendered all other diseases more unmanageable. * * * Epidemic cholera broke out in the beginning of August, and on the first day I prescribed for seven cases. It continued about two weeks, and fifteen cases were treated, all of which recovered. One more case occurred in the second week of September, which was the case that terminated fatally from choleraic fever." Dr. Annan attributes the mildness of the epidemic to the constant use, for cooking and drinking, during the summer, of rain-water, instead of the ordinary supply of water, which, as above mentioned, is highly impregnated with lime. In the table of etiology, one case is assigned to "impotence from mumps."

6. In the winter of 1847–48, Miss D. L. Dix presented a memorial to the Legislature of Tennessee, representing the inadequacy of provision in that State for the proper care and treatment of the insane, and urging the establishment of a new institution in place of the old asylum at Nashville. On the 5th of February, 1848, that Legislature passed an act, under the provisions of which a hospital for the insane has been erected upon a farm of 255 acres, distant six miles from Nashville. The general plan of the building is that of the Butler Hospital at Providence, R. I. It is of the castellated style, forming the side and the two ends of a parallelogram. Its front is 405 feet in length, and consists of a central portion and two wings, the latter of which are three stories in height. Attached to the extremity of each of them, and receding at a right angle, is another wing 144 feet in length. The central division contains the offices, the officers' apartments, a chapel, and rooms for quiet and convalescent patients. Water is distributed from a tank in the dome, being driven there by forcing-pumps. The apparatus of the bath-rooms and the water-closets was so badly constructed that it has been necessary to remove the whole of it. At the date of this report, a better had been introduced into one-half of the building. An instructive lesson, this, to persons hereafter engaged in the erection of a similar establishment.

This hospital was opened for the reception of patients on the 1st of March, 1852. On the 19th of April, the patients in the old building at Nashville were transferred to it. There were 60 of them, 39 men and 21 women, and their removal was accomplished without accident.

	Men.	Women.	Total.
Patients admitted to the 1st of October, 1853, including those transferred from the old hospital	111	65	176
Discharged, including deaths	49	27	76
Remaining October 1, 1853	62	38	100
Of those discharged, there were cured	31	11	42
Died	4	5	9

Causes of Death.—Marasmus, 4; meningitis, 1; epilepsy, 1; apoplexy, 1; dysentery, 1; "delirium," 1.

"The dysentery has prevailed epidemically in the institution," remarks Dr. Cheatham, the superintendent of the hospital, and the author of the report, "the last and the present season. One case only proved fatal."

"Of the thirteen patients who have been discharged, or left, much improved, eight were removed by their friends prematurely. We are satisfied that all would have recovered entirely, if they had been permitted to remain a short time longer."

The second biennial report contains a minute description of the building, with a view of which it is embellished. It has been determined to introduce the apparatus for heating by steam, and for ventilating by mechanical power.

	Men.	Women.	Total.
Patients in the hospital, Oct. 1, 1853	62	38	100
Admitted in the course of two years	64	28	92
Whole number	126	66	192
Discharged, including deaths	63	24	87
Remaining, Oct. 1, 1855	63	42	105
Of those discharged, there were cured			40
Died			15

Deaths from exhaustion following acute mania, 2; marasmus, 3; epilepsy, 2; consumption, 4; chronic diarrhœa, 1; acute meningitis, 1; apoplexy, 1; effects of a fall, 1.

"The general health of the entire establishment, for the last two years," remarks Dr. Cheatham, "has been remarkably good. No epidemic of a malignant character has visited the institution. Cholera prevailed in Nashville and the neighbourhood, during the months of June and July, 1854, to a considerable extent, yet we escaped entirely. Dysentery, during the last and preceding summers, prevailed in many portions of the country in a malignant form. At one time, during the last summer, we were seriously threatened, and many of our household attacked, but all fortunately recovered."

The buildings not being fully completed, many applicants for admission have been rejected.

7. The Mississippi State Lunatic Asylum is in the township of Jackson. It was opened for the reception of patients on the 8th of January, 1855. It is under the superintendence of Dr. William S. Langley, of whose services the trustees, in their report, speak in terms of high commendation. The building is of brick, and stuccoed. It consists, like most others of the kind in this country, of a central edifice with a wing upon either side. The apartments are warmed by steam, and lighted by gas made upon the premises. The engine-room, kitchen, wash-room, and gas-factory are in detached buildings. The farm contains 140 acres, about 50 of which "have been inclosed with a plain but substantial board fence, and a sufficiency cleared for pleasure and promenade grounds for the patients." The whole cost of the establishment was about $165,000, and it will accommodate 180 patients.

The report bears the date of December 31, 1855, a few days less than one year from the time at which the institution went into operation. In the course of that intervening period, 70 patients had been received. Of these, 42 were males and 28 females. Seven had been discharged "cured," and 5 had died. At the close of the year, 51 remained in the asylum. "Of those who died, all were hopelessly diseased before they were admitted, three having survived but a few days after they reached the asylum."

"As yet," remarks Dr. Langley, "little has been done towards providing the patients with such occupations and amusements as every well-arranged hospital for the insane should possess." Many of the men have worked upon the grounds, and some of the women have assisted in completing the furnishing arrangements of the apartments. The introduction of libraries, musical instruments, games, a gymnasium, and a calisthenium, is recommended in the report.

One of the primary objects affecting the selection of a site for an institution for the insane is a bountiful supply of water. In this respect, it appears, the Mississippi asylum is imperfect. The trustees suggest the propriety of remedying this defect by an artesian well.

Dr. Langley estimates the number of insane persons in Mississippi to be 376, and that of idiots 150. He bases this estimate upon the results obtained by the commission in Massachusetts in 1854, in connection with the hypothesis—a hypothesis proposed by himself—that the proportion of the insane and the idiotic to the sane is twice as large in Massachusetts as it is in Mississippi.

8. The *Insane Asylum of North Carolina* is one mile distant from the city of Raleigh, upon a tract of land containing about 160 acres. It was opened upon the 26th of February, 1856, under the superintendence of Dr. Edward C. Fisher. The plan of the building is as follows: The central edifice is 80 feet by 120, with a portico the whole length of the front. It is 60 feet high from the basement to the crown of the roof, divided into four stories, which are appropriated to parlors, offices, apartments for the superintendent, steward's dining-room, and chambers for the respective officers. Upon either side of this edifice, a wing projects in a straight line, to the distance of 313 feet. It is three stories high, and contains six wards. The two wings will accommodate 250 patients. The building is lighted by gas and heated by steam. The kitchen and bakery are in a building about 80 feet in the rear of the central edifice. No report has yet been issued from this institution since it was opened. The number of patients on the 21st of July last, was 65.

9. *a.* We proceed to show what has been done in several of the States towards the construction of institutions which have not yet gone into operation.

The Michigan State Asylum for the Insane is situated one mile from the village of Kalamazoo, the seat of the government of the State, and in the immediate vicinity of the Michigan Central Railroad. The farm contains a fraction less than 168 acres. "Most of this land is finely timbered with the original growth of oak, hickory, and other trees. It is designed to preserve about 50 acres in groves and woodland, immediately about the buildings, to be tastefully laid out in walks and drives, and its natural beauties enhanced by art. * * * Probably few situations in the United States, which have been selected for similar purposes, equal this in natural beauty and advantages."

"The building consists of a centre, and six wings. It has a front of 700 feet, and, with the two end wings, which are at right angles to the others, has an entire length of about 1000 feet; the whole being designed to accommodate 250 patients," but the number may be increased to 268.

In the establishment of this institution, the principles and suggestions contained in the "propositions" relative to the construction of hospitals for the insane, which were adopted and issued by the Association of Medical Superintendents of American Institutions for the Insane, in 1851, have been "fully carried out, with the addition, it is believed, of several important improvements."

The building was commenced early in the spring of 1854, and Dr. John P. Gray, then Assistant Physician and Acting Superintendent of the Asylum at Utica, New York, was appointed as Superintendent. Being afterwards elected as the successor of Dr. Benedict, at Utica, he resigned the former appointment, and Dr. E. H. Van Deusen was chosen to fill his place.

b. At the annual meeting of "The Medical Association of Alabama," held at Mobile in December, 1850, it was unanimously "Resolved, that a committee be appointed to draft a memorial to be laid before the Legislature of the State, at its next regular session, setting forth the necessity and advantages which recommend the establishment of a lunatic asylum; and that said committee be requested to attend at Montgomery, for the purpose of aiding Miss Dix in her efforts to that end."

Dr. A. Lopez, of Mobile, was the chairman of the committee, appointed in pursuance of this resolution, and the memorial addressed by them to the legislature embodies, in a very condensed form, a large amount of information adapted to the exigency of the case. In 1852, a bill was passed, authorizing the establishment of a State Hospital for the accommodation of not less than two hundred insane persons; and five per centum of the State revenues, other than trust funds, was set apart, for four years, to meet the expense thereof. The fund thus raised amounted to $116,000. In 1853, at the request of the legislature, Dr. Lopez visited all the principal institutions for the insane in the United States, and prepared a plan for the hospital, which was adopted by the building committee. This plan includes accommodations for 250 patients, and the modern arrangements for ventilation, warming by steam, and lighting by gas.

A farm of 320 acres, situated about one mile from the University in Tuscaloosa, was purchased, and the hospital buildings commenced thereupon. It was soon found that the fund was insufficient. Another appropriation was granted by the legislature in 1854; but it received the executive veto. In 1855, chiefly through the exertions of Dr. Lopez, an appropriation of $150,000, payable in three equal annual instalments, was obtained. This also was vetoed by the governor; but the legislature again passed the measure, and by a majority which vetoed that veto. The wings of the building "are now nearly ready for the roof, and the centre building up for the third floor of joists. The carpenter's work is far in advance of the brick work." After his many and persistent labours, Dr. Lopez may at length catch a glimpse of the goal for which he has nobly wrought; and may console himself with the assurance that "All is well that ends well."

c. The Legislature of Iowa, in the course of the session for 1855, made an appropriation of fifty thousand dollars towards the foundation of a State Lunatic Hospital. A farm near Mount Pleasant, in Henry County, has been purchased, and the buildings commenced.

d. It is now several years since a movement was made in Wisconsin to establish a State institution for the insane. A beautiful tract of land, containing 104 acres, and lying upon the banks of Lake Mendota, about six miles from the State capitol, in Madison, was purchased for a site. The legislature made an appropriation of fifteen thousand dollars towards the construction of the necessary buildings. If we have not been misinformed, plans were drawn and contracts for the work were made. Some difficulties then arose of sufficient importance to suspend all operations, and they have not been resumed.

e. In the spring of 1855, the Legislature of Massachusetts authorized the establishment of a new (the third) State Hospital for the Insane, at an expense not to exceed two hundred thousand dollars. A farm in Northampton has been purchased, and the hospital building, designed by Dr. Luther V. Bell, commenced. The corner-stone was laid on the 4th of July, 1856, with appropriate ceremonies, and an address by Dr. Edward Jarvis.

In Arkansas, as well as in Texas, a State Hospital is in contemplation; but whether any proceedings for its establishment have been instituted, we have not been informed.

10. Besides the regularly organized institutions, there are two asylums for

the insane poor, which, as they are separate from the other almshouse departments, and receive a pretty large number of patients, claim attention in this place.

During the last fifteen years, the insane in the Almshouse of King's County, New York, the county which embraces the city of Brooklyn within its limits, have occupied a building erected especially for their accommodation, disconnected from the other edifices of the establishment, and at some distance from them. It is at Flatbush, and is called the King's County Lunatic Asylum. The report for the fiscal year ending with the 31st of July, 1854, is signed by Dr. E. S. Blanchard, the resident physician.

	Men.	Women.	Total.
Patients in the asylum at the beginning of the year	74	113	187
Admitted in the course of the year . .	59	78	137
Whole number in the course of the year .	133	191	324
Discharged cured	41	81	122
Died	14	10	24
Remaining, July 31, 1854	78	100	178

Died of peritonitis, 4; phthisis, 3; cholera, 3; empyema, 3; diarrhœa, 3; exhaustion, 2; marasmus, 2; epilepsy, 2; "typhoids," 1; softening of the cerebellum, 1.

But two patients in the course of the year were subjected to mechanical restraint. One of these had the suicidal propensity, the other was labouring under violent mania.

Of the 178 patients remaining in the asylum at the close of the year, 134 were foreigners. It appears that some pay-patients are received, the expenses of 16 of those who were in the asylum during the year having been defrayed by their friends.

At the time this report was written, a new edifice, to be occupied by the insane, was in progress. It "is erected on the county farm, on a beautiful site, and commands many delightful views of the surrounding country. When finished, it will compare favourably with any other institution of a similar nature in the world. It is 250 feet in its extreme length, 84 feet in its extreme breadth, and the height to the top of the dome is 86 feet. The halls and dormitories present a light and airy appearance. The rooms are 7 by 11 feet. The height of the ceilings ranges from 14 to 10 feet. Each room is lighted by a large window, on the outside of which there is a light iron guard frame. The whole building will be heated by steam," the radiating pipes being in an air-chamber in the cellar. "The entire structure is of brick, trimmed with stone."

This establishment was opened on the 1st of November, 1855, under the medical care of Dr. Robert B. Baiseley. Although it was intended for but about 150 patients, yet, ever since it was opened, the actual number present has been as high as from 190 to 200.

b. A large portion of the indigent insane of Hamilton County, Ohio, have for many years been kept in the Commercial Hospital at Cincinnati. A meeting of members of the medical profession was held in that city in August, 1853, and the following resolutions were unanimously adopted:—

"*Resolved*, That the lunatic department of the Commercial Hospital is totally unfit for the purposes for which it was intended, and that its continuance as an asylum for the insane is at variance with the dictates of a sound philosophy, and disgraceful to the humanity of a civilized and Christian community.

"*Resolved*, That the commissioners of this county be respectfully requested to investigate the condition of the county lunatics now in the Commercial Hospital, and make such provision for their better comfort, care, and treatment, as the necessities of their present condition, guided by the laws of humanity and justice, may require."

The action of this meeting led to further investigations, and it was soon decided that the insane persons in question should be removed from the hospital. Pending such proceedings as may result in the establishment of a special hospital, a majority of them were transferred to a temporary receptacle at Fairmount, Mill Creek Township, 2½ miles from the centre of Cincinnati. This was opened on the 7th of November, 1853.

	Men.	Women.	Total.
Patients transferred from their previous quarters at the opening	48	44	92
Returned from the State Asylum as incurable		3	3
Admitted to June 5, 1854	29	29	58
Whole number	77	76	153
Discharged, including deaths	24	22	46
Remaining, June 5, 1854	53	54	107
Of those discharged, there were cured	12	11	23
Died	5	1	6

Deaths from consumption, 2; congestion of brain, 1; maniacal exhaustion, 1; dropsy, 1; cholera, 1. "The case of cholera occurred in a person who had been admitted the day previous, and who had recently arrived in the city from the South."

The accommodations proving insufficient, two additional buildings were procured in the course of the second year of the operations of this establishment.

	Men.	Women.	Total.
Patients remaining, June 5, 1854	53	54	107
Transferred from the Commercial Hospital, June 10, 1854	16	16	32
Returned from the Ohio Lunatic Asylum	3	10	13
Admitted from other sources	65	59	124
Whole number	137	139	276
Discharged, including deaths	62	53	115
Remaining, June 4, 1855	75	86	161
Of those discharged, there were cured	25	23	48
Died	18	11	29

Deaths from cholera, 11; phthisis pulmonalis, 6; apoplexy, 2; maniacal exhaustion, 2; typhus fever, 2; ulceration of bowels, 2; marasmus, 1; suicide, 1; scorbutus, 1.

"On the last day of May, 1854, a patient recently from New Orleans was admitted, and was seized with cholera on the 1st of June. In six hours after the discovery of the first symptoms, the patient died. On the 6th of June, a healthy, robust inmate, who had assisted to nurse this patient, and who occupied the adjoining room, was attacked with the disease." No other cases occurred until the 26th, immediately after a change of water used by the patients, from that of cisterns and springs to that of Mill Creek. The disease "soon assumed an epidemic character, spreading through both of the male and one of the female wards, and seizing upon the strongest as well as the more debilitated inmates, though the latter more readily succumbed to its deadly grasp. It prevailed in the male wards fourteen days after its reappearance, before it entered the female ward." Its course in the latter was similar to that in the former, but the mortality was less. "This was owing, perhaps, to the less crowded condition of the females, and to their better bodily health. The disease was confined to the building first rented. Nearly all in this building, who escaped an attack of cholera, suffered from bilious diarrhœa or dysentery. The last case of cholera occurred on the 31st of August."

Twenty-two of the patients were also attacked with scorbutus, although, as it is stated, every effort was made to procure a proper supply of vegetables for the use of the inmates.

The two reports from which the foregoing extracts are made are from the pen of Dr. J. J. Quinn, the Superintendent. Since they were published, Dr. Quinn has been succeeded by Dr. O. M. Langdon.

11. The Western Pennsylvania Hospital, at Pittsburg, an institution for the treatment of general diseases, was founded by voluntary contributions, but, since it went into operation, it has received two donations from the State, one of ten thousand dollars, the other of twenty thousand. It was opened in March, 1853, and from that time until the 31st of March, 1856, the number of patients received into the insane department was 74. Fifty had been discharged cured, 4 had died, and 5 remained at the latter date. Of 8 who were discharged improved, 6 recovered after leaving the hospital.

To meet the wants of the community in the western part of the State, it was decided, some months ago, to increase the accommodations for the insane by the construction of a separate building. The question arose whether that building should be placed in the city or in the country. After no inconsiderable deliberation, it was very wisely concluded that it should be in the country, and constructed upon the most approved plan of the present day. The whole sum of the appropriations by the Legislature, as above mentioned, has been reserved for disbursement upon the buildings, while a farm of 160 acres has been purchased by private contributions. As described by Dr. Joseph A. Reed, the physician to the department for the insane, the farm is "on the Monongahela River, nine miles from the city of Pittsburg, in a remarkably healthy neighbourhood, and surrounded by exhilarating scenery. It presents three large plateaux, extending back from the river, and rising from one to the other some fifty feet. The first is fine garden land; the second, containing some 40 acres, covered with forest-trees; the third, fine farming land. On the second, the building will be placed. Several large springs will furnish an abundant supply of excellent drinking and cooking water, while from the river any amount may be forced at comparatively small expense. The farm is accessible by railroad, river, or carriage."

12. We know of but five private establishments for the treatment of the insane in the United States. The oldest of these is that of Dr. Cutter, at Pepperell, Massachusetts. The late Dr. James Macdonald established a private institute at Murray Hill, New York City, about the year 1837, and some years afterwards removed it to Flushing, Long Island, where it is still continued under the title of Sanford Hall, and in charge of the Doctor's brother, General Allan Macdonald. It is one of the most complete and beautiful establishments of the kind in the world. Dr. Edward Jarvis has an establishment at Dorchester, Massachusetts; Dr. Edward Mead one near Cincinnati, Ohio; and Dr. George Cook one at Canandaigua, New York.

In conclusion, we present our readers with a tabular statement of the institutions for the insane now in operation in the United States, together with such of the more important information relating to them as we have been able to collect. No answers have been received from some of the superintendents to whom letters were addressed.

	Title.	Location.	Present superintendent.
U. S. Institution.			
District of Columbia .	Government Hospital for the Insane	Near Washington	Dr. Charles H. Nichols
State Institutions.			
Maine	Insane Hospital	Augusta	Dr. Henry M. Harlow
New Hampshire . .	Asylum for the Insane	Concord	Dr. John E. Tyler
Vermont . .	Asylum for the Insane	Brattleboro'	Dr. Wm. H. Rockwell
Massachusetts . .	Lunatic Hospital	Worcester	Dr. Merrick Bemis
do. . . .	Lunatic Hospital	Taunton	Dr. George C. S. Choate
New York . . .	Lunatic Asylum	Utica	Dr. John P. Gray
New Jersey . . .	Lunatic Asylum	Trenton	Dr. H A. Buttolph
Pennsylvania . .	Lunatic Hospital	Harrisburg	Dr. John Curwen
Maryland . . .	Hospital for the Insane	Baltimore	Dr. John Fonerden
Virginia . . .	Western Lunatic Asylum	Staunton	Dr. Francis C. Stribling
do.	Eastern Lunatic Asylum	Williamsburg	Dr. John M. Galt
North Carolina . .	Insane Asylum	Raleigh	Dr. Edward C. Fisher
South Carolina . .	Lunatic Asylum	Columbia	Dr. J. W. Parker
Georgia		Milledgeville	Dr. Thomas F. Green
Kentucky . . .	Eastern Lunatic Asylum	Lexington	Dr. W. S. Chipley
do. . . .	Western Lunatic Asylum	Hopkinsville	Dr. Samuel Annan
Tennessee . . .	Hospital for the Insane	Near Nashville	Dr. W. A. Cheatham
Ohio	Lunatic Asylum	Columbus	Dr. R. Hills
do.	Northern Lunatic Asylum	Newburg	Dr. R. C. Hopkins
do.	Southern Lunatic Asylum	Dayton	Dr. J. J. McIlhenny
Indiana . . .	Hospital for the Insane	Indianapolis	Dr. James S. Athon
Illinois . . .	Hospital for the Insane	Jacksonville	Dr. Andrew McFarland
Missouri . . .	Lunatic Asylum	Fulton	Dr. T. R. H. Smith
Mississippi . . .	Lunatic Asylum	Jackson	Dr. Wm. S. Langley
Louisiana . . .	Insane Asylum	Jackson	
California . . .	Insane Asylum	Stockton	Dr. R. K. Reid
Corporate Institutions.			
Massachusetts . .	McLean Asylum	Somerville	Dr. Chauncey Booth
Rhode Island . .	Butler Hospital	Providence	Dr. Isaac Ray
Connecticut . . .	Retreat for the Insane	Hartford	Dr. John S. Butler
New York . . .	Bloomingdale Asylum	New York City	Dr. D. Tilden Brown
Pennsylvania . .	Pennsylvania Hospital for the Insane	Philadelphia	Dr. Thos. S. Kirkbride
do. . . .	Friends' Asylum	Philadelphia	Dr. J. H. Worthington
Pauper Institutions.			
King's County, N. Y. .	Lunatic Asylum	Flatbush	Dr. Robert B. Baiseley, *Physician*
Hamilton County, Ohio	Lunatic Asylum	Mill Creek	Dr. O. M. Langdon
Boston City . . .	Lunatic Asylum	South Boston	Dr. Clement A. Walker, *Physician*
New York City . .	Lunatic Asylum	Blackwell's Island	Dr. M. H. Ranney
Mixed Institutions.			
Pennsylvania . .	Western Pa. Hospital	Pittsburg	Dr. J. A. Reed, *Physician*
Maryland . . .	Mount Hope Institution	Baltimore	Dr. Wm. H. Stokes, *Visiting Physician*
Private Establishments.			
Massachusetts . .		Pepperell	Dr. N. Cutter
do. . . .		Dorchester	Dr. Edward Jarvis
New York . . .	Sanford Hall	Flushing	Genl. A. Macdonald
do. . . .	Brigham Hall	Canandaigua	Dr. George Cook
Ohio	Retreat for the Insane	Near Cincinnati	Dr. Edward Mead

This table is intended chiefly as a historical record, and not as an exposition of the results of hospital treatment. Especially would we deprecate, in the name of justice, as well as of scientific truth, any attempt to judge of the merits of the respective institutions by a comparison of their statistics. Under the most advantageous circumstances, a just comparison is almost impossible; and, in this table, all the elements, besides the mere general results, which would render such a proceeding in the least justifiable, are wanting.

P. E.

When opened.	Farm: acres.	STATISTICS: FROM OPENING, IF NOT SPECIFIED.					
		Last date.	Admitted.	Discharged.	Cured.	Died.	Remain.
Jan. 15, 1855	190	To June 30, 1855	63	3	3	0	60
Oct. 14, 1840	115	To Nov. 30, 1855	1559	1404	631	193	155
Oct. 29, 1842	125	To June 1, 1856	1379	1225	613	128	154
Dec. 12, 1836	300	To Aug. 1, 1855	2393	1999	1127		394
Jan. 18, 1833	100	To Nov. 30, 1855	4962	4619	2284	553	336
April 7, 1854	133	To Nov. 30, 1855	497	235	106	62	262
Jan. 16, 1843	140	To Dec. 1, 1855	4588	4133	1917	543	455
May 15, 1848	111	To Dec. 31, 1855	896	663	338	113	233
Oct. 1, 1851	130 10	To Dec. 31, 1855	626	376	95	76	250
1828	198	From July 1, 1836, to Oct. 1, 1855	1338	960	516	295	388
Feb. 22, 1856	160						
Jan. 1, 1828	44	To Nov. 5, 1855	899	727	363	176	172
1824	40	To Oct. 1, 1854	1976	1782	731	795[1]	194
Sept. 18, 1854	385	To Dec. 31, 1855	113	32	8	17	81
March 1, 1852	250	To Oct. 1, 1855	268	163	83	24	105[2]
Nov. 30, 1838	67	To Nov. 30, 1855	2776	2560	1411	338	216
March 5, 1855		To Nov. 15, 1855	164	52	42	7	112
Sept. 1. 1855	50	To Nov. 15, 1855	59	11	4	0	48
Nov. 21, 1848	160	To Oct. 21, 1855	910	714	485	83	196
Nov. 3, 1851		To Dec. 1, 1854	404	238	148	27	166
Dec. 1, 1851	460	To Nov. 30, 1854	193	99	47	39	94
Jan. 8, 1855	140	To Dec. 31, 1855	70	19	7	5	51
Nov. 21, 1848	132	To Dec. 31, 1853	325	192	53	95	132
Oct. 8, 1853	100	From May 14, 1852, to Dec. 31, 1854	651[3]	355	312	43	154
Oct. 16, 1818	33	To Dec. 31, 1855	4006	3814	1858	446	192
Dec. 1, 1847	115	To Dec. 31, 1855	719	582	231	132	137
April 1, 1824	77	To April 1, 1856	2961	2764	1463	308	197
June 10, 1821	41	From Jan. 1, 1845, to Dec. 31, 1855	1411[4]	1284	610	211	127
Jan. 1, 1841	113	To Dec. 31, 1855	2752	2522	1336	292	230
May 15, 1817	62	From March 1, 1842, to March 1, 1856	555[5]	489	235	67	66
Nov. 1, 1855							
Nov. 7, 1853		To June 4, 1855	322	161	71	35	161
June 10, 1839	20	From Jan. 1, 1847, to Dec. 31, 1855	4400[6]	2654	1693	1173[7]	573
March 13,		To March 31, 1856.	74	69	50	4	5
1842	18	To Dec. 31, 1855	1319				122

[1] Asiatic cholera has visited this asylum four times.
[2] There was an old asylum, at Nashville, before this was established; but we have not its published records.
[3] These statistics commenced before the asylum was opened, when the insane patients were treated in the general hospital.
[4] Including 104 in the asylum, Dec. 31, 1844.
[5] Including 58 in the asylum, March 1, 1842.
[6] Including 383 in the asylum, Jan. 1, 1847.
[7] Asiatic cholera in 1849 and 1854.

ART. XXIII.—*Obstetrics; the Science and the Art.* By CHARLES D. MEIGS, M. D., Professor of Midwifery and the Diseases of Women and Children in Jefferson Medical College at Philadelphia, etc. etc. etc. Third edition, revised. With one hundred and twenty-nine illustrations. 8vo. pp. 758. Philadelphia, 1856: Blanchard & Lea.

As a comprehensive, faithful, and able exponent of the theory and practice of obstetrics, the treatise of Dr. Meigs is not excelled by any of the numerous and excellent works, devoted to the same subject, which crowd the shelves of our medical libraries. From an intimate acquaintance with its pages the student will acquire an accurate knowledge of all that relates to parturition, whether it take place under circumstances where everything is favourable to its regular progress and ready and safe termination, or where, from any cause, relating to the fœtus or to the mother, it is rendered tedious, or difficult, or impossible, without the intervention of the practitioner; the rules by which he is to be guided in the conduct of labour under all the varied circumstances in which it may occur, and with the principles upon which these rules are severally based. The whole communicated with a clearness and earnestness of manner that cannot fail to impress both the theory and the practice deeply and indelibly upon his mind. To its pages the practitioner, also, may resort with profit for instruction in questions of doubt and difficulty, certain to find inscribed upon them not only the fruits of the author's own extensive experience and careful study of the subject, but of all who have contributed to the improvement of the science and art of obstetrics down to the latest dates.

But while our commendation of that portion of the treatise of Dr. Meigs which is devoted strictly to an exposition of the doctrines and practice of midwifery is thus unqualified, we cannot allow the work to go forth without recording our dissent from the views advanced by the author in two, at least, of the chapters he has devoted to a consideration of the diseases of the puerperal state, and of the new-born infant. In this third edition we had really expected to find that the account given of puerperal fever would present important modifications, in accordance with the well-authenticated observations which have crowded in upon us recently in reference to the pathology and treatment of that disease, all of them adverse to the views heretofore entertained and enforced by Dr. Meigs. We must confess we were not a little disappointed to find a reiteration of the same doctrines in regard to the nature of puerperal fever, of the same directions for its treatment, as though they had the support of, instead of being repudiated by, all recent observations and experience. We are not only convinced of the inaccuracy of Dr. Meigs' views in respect to the pathology of puerperal fever, but we consider them dangerous as leading to a one-sided routine practice, which, in the larger number of instances, cannot fail to lead to the most disastrous results; they are the more dangerous, from the earnestness and confidence with which they are enforced, being calculated to induce the inexperienced to turn a deaf ear to the evidence by which their unsoundness is exposed.

The other chapter to which we allude is that on cyanosis neonatorum.

Dr. Meigs still insists that the cause of this affection is the patulous condition, after birth, of the foramen ovale, in consequence of which the orifice of the pulmonary artery retains its fœtal diameter, and "the pulmonic ventricle continues in its state of partial *ante partum atelectasis;*" and he founds upon this theory of the production of cyanosis a particular plan of treatment; the placing the cyanosed child upon its right side, in such a position as to cause, as he supposes, the blood in the right auricle to press down the valve of Botalli upon and close the foramen ovale, thus preventing its direct passage into the left auricular cavity, while the right ventricle is enabled now to make a complete diastole, and, by its subsequent contraction, to drive the blood into the pulmonary artery and dilate the orifice of this vessel to a proper size.

We do not propose to enter, on the present occasion, into an examination of the validity of this explanation of the production and cure of cyanosis, nor to

deduce the facts and arguments by which it is controverted. It is rejected by nearly all the leading pathologists of the present day. The treatment proposed by Dr. Meigs, by itself considered, is unobjectionable. In all cases it will be found to give relief, the position of the body on the right side, with the head and trunk slightly elevated, being that best adapted to facilitate the circulation. To suppose, however, that, in cases of actual cyanosis, we can thus cure the disease is to imagine an impossibility. We have only to consult the records of morbid anatomy to be convinced that cyanosis is generally the result of such abnormal conditions of the heart or great bloodvessels as are altogether irremediable. It is true, Dr. Meigs would lead us to view the most frequent of these abnormal conditions as the result of the persistent patulous condition of the foramen, and that, to prevent their occurrence, it is only necessary to cause, as soon after birth as possible, by the mode he has indicated, the valve of Botalli so to apply itself over the foramen as to close the direct communication between the two auricles. But, to show the impossibility of this being the case, we have only to refer again to the facts revealed by morbid anatomy; these, indeed, would lead us to infer that the persistent open condition of the foramen ovale, in place of being the primary condition, is rather the result of the impediment which, in so large a number of cases, is presented to the free passage of the blood through the pulmonary artery in consequence of the abnormal condition of the latter vessel.

We would direct those of our readers who may be desirous of examining more fully the facts and observations bearing upon the pathology of cyanosis, to the very able paper by Dr. Moreton Stillé, to be found in this journal, 1844; to Dr. Chever's communication in the *London Medical and Physical Journal*, for March, 1847; to an essay by Dr. Craigie in the *Edinburgh Medical and Physical Journal*, for October, 1843; and to the second volume of the *Pathological Anatomy* of Professor Rokitansky. D. F. C.

Art. XXIV.—*The Sunburnt Appearance of the Skin as an early Diagnostic Symptom of Supra-Renal Capsule Disease.* By Isaac E. Taylor, M. D., Physician to Bellevue Hospital, New York. With Coloured Illustrations. Reprinted from the New York Journal of Medicine. 8vo. pp. 21: New York, 1856.

Our entire ignorance of the physiological value of the supra-renal capsules —of the functions they perform in the animal economy during the state of health, has caused their diseased conditions to be, in a great measure, if not completely, overlooked in the investigations that have been so industriously made into the immediate causes of morbid phenomena. Recent observations have, however, given to the pathological states of these bodies an importance, which, by directing the attention of the inquiring physician to a more careful study of their lesions, and to the phenomena by which they are accompanied, may lead to a knowledge of their functions, the morbific causes to which they are subject, the part which disturbance or arrest of their normal action plays in the production of disease in other parts, and perchance to the means of prophylaxis, or of cure in cases in which they are liable to become diseased, or are actually the seat of disease.

The attention of the medical profession was first directed by Dr. Thomas Addison, of London, to a form of anæmia attended with a peculiar discoloration of the skin, and of so serious a character as to have proved fatal in every instance reported, and attended, in all the cases in which a post-mortem examination was made, by lesions varying in character and extent, of the supra-renal capsules. The observations of Dr. Addison were published in May, 1855. Others, confirmatory of these, were presented by Dr. Jonathan Hutchinson, in the *Medical Times and Gazette*, of London, 1855 and 1856; and we find, in *L'Union Médicale*, August 7, 1856, that the general accuracy of these observations has been recognized by M. Trousseau, of Paris.

In the work before us we have an able and most interesting monograph on this subject, in which the description of the morbid phenomena referred to, and the general conclusions in reference to their pathological value and bearing, are based upon a number of cases carefully studied throughout their course.

The discoloration of the skin, which is a leading and characteristic feature of the class of cases in question, is described by Dr. Addison, as pervading the entire surface of the body, but commonly most strongly marked on the face, neck, superior extremities, penis, scrotum, and in the flexures of the axilla, and around the navel. He represents it as of a dingy or smoky appearance, or of various tints or shades of deep amber or chocolate-brown; in one instance, the skin was so universally, and so deeply coloured that it might have been mistaken for that of a mulatto. In the very early period of the disorder, and when the supra-renal capsules are less extensively diseased, according to Dr. Addison, the discoloration may, doubtless, be so slight and equivocal as to render the source of the anæmic condition uncertain. Every tinge of yellow, or mere sallowness, throws, he adds, a still greater doubt over the true nature of the case—the more decided the discoloration partakes of the peculiar dingy or dark appearance, the stronger should be our impression of the capsular origin of the disorder. Dr. Hutchinson employs the term *bronze* to indicate the discoloration of the skin, Dr. Taylor believes that this will only apply to the more advanced cases; in the early stages of the disease, he has not been able to recognize its adaptation, and, even in the advanced cases, the analogy to the colour of the mulatto, or rather of a West Indian, seems to him more correct and just.

Dr. Taylor remarks, that on examining the cases of Dr. Addison, it appears the discoloration of the skin had existed for a length of time, and, in some, it was not recognized till after death, and that they were not, therefore, seen in the early stage of the discoloration and disease, and Dr. T. believes it will be shown that the dingy, smoky, or deep amber, or chestnut brown, or mulatto appearance of the discoloration, becomes quite characteristic when the disease is of a chronic character.

In the histories of the cases given by Dr. T., he desires particularly to call attention to the discoloration of the skin, and the pigment on the lips, as he believes, in the early, and, in two cases, in the incipient stage of the disease.

The first of Dr. T.'s cases was that of a male, 22 years old; labourer; born in Ireland; single; a moderate drinker; his mother died of phthisis; other members of his family healthy. Had cough and spitting of blood three years previously; not troubled with cough much since. Has had enlargement and suppuration of lymphatic glands of neck. Had, shortly before admittance into hospital, an attack of intermittent fever. He died in the course of the sixth week after his admission, in a state of coma.

"The appearance of this patient, as to his physical constitution, presented a tuberculous diathesis; there was some emaciation. The expression of face dull, listless, and rather stupid; he answered questions slowly, hesitatingly, and would drawl out his words; his mind was feeble. The expression of eye was sickly, earthy, wanting the natural hue and expression. The conjunctiva oculi et palpebræ was pearly, anæmic, and contrasted markedly with the colour of his face. The discoloration, when first noticed, was of a light sunburnt appearance, of a *dirty* shade of yellow; and extended across the centre of the forehead and no higher, being a perfect line of demarkation, to the natural colour of the skin. The whole of the scalp was free. The sunburnt discoloration extended down the temples, along the side of the cheeks on both sides, around the lower portion of the ear, and then to the back of the neck, and engaged the whole neck as low as the half of it. The ears were free, and all the lower part of the scalp. In truth, he was a perfect representation of a man who had been exposed to the sun with his hat on, divested of the cravat, and with collar turned over, with only that part that could be exposed discolored. The shade and appearance of this colour could not be better marked; the posterior part of the neck, and the lateral sides of the cheeks and forehead were the darkest, as though it had been of a longer duration. The spots where the glands of the neck had suppurated, remained free. Every week the appear-

ance of the discoloration became of a more deep and sunburnt character. The upper and lower lips had, when first noticed, several small, darkish-red spots; three or four on each lip. These spots were on the outer edge of the lips, and became gradually darker. They appeared very different from the lips in ordinary anæmia or cachectic state, and induced me to feel a stronger conviction in the opinion I entertained of the nature of the disease. The back of the hands also presented the same appearance, which extended to the wrist; the inside was free. There was no albumen in the urine, though he had died in a state of coma, indicating the nervous system was strongly affected. The result of the autopsy verified the diagnosis. Both of the supra-renal capsules were found in a state of tuberculous degeneration. The left more so than the right. The left was much larger than natural, being of the size of half a large hen's egg. On cutting through the capsule, there was but a few lines of thickness of the cortical structure; it contained a solid and semifluid mass of a yellow colour. The whole medullary structure was gone. The right capsule was not so large, and two-thirds of the capsule consisted of concrete tuberculous matter, the rest being semifluid. Under the microscope, nothing was developed but what would appertain to tuberculous degeneration, as broken up cells, fatty matter, and granular particles. There was no original trace of the natural organ. The left capsule weighed four drachms."

The second case was in a male, 42 years old; married; born in England; a moderate drinker. Had no hereditary disease, nor any disturbance of health until about six months previous to his admission into the hospital, when he had what he termed 'sunstroke;' since then he complained of weakness and dizziness of head. Died in forty-one days after admission, in a state of coma.

"This case is one of the most interesting of this form of disease, having chronic disease of the kidney when he came into the hospital, which, in the course of a few weeks, terminated his existence. The post-mortem revealed a fatty degeneration of that organ to the eye and by the microscope. The discoloration of the skin commenced between two and three weeks previous to his death, taking its rise on the centre of the forehead, as if he had been exposed to the sun, and was in marked contrast at this early period, to his clear, white, and anæmic skin, particularly so, as he was quite bald. The pigment gradually extended itself from the forehead, on both sides of the face, down the cheeks to the side of the neck, avoiding the ears, to the posterior part of the neck. The lips at the juncture of the mucous membrane and the skin, began also to exhibit the light reddish line. In three weeks it had become like a perfect recent sunburnt colour, showing the rapidity with which it may manifest itself, its extent and locality. After death it faded in its colour so much that in twenty-four hours there was left but a light dirty yellowish, though quite characteristic, discoloration. From the investigation of the urine, with its light specific gravity, and the slight proportion of albumen, it was not expected he would survive long, and the kidney affection was the chief, if not the sole cause of his death. But it was exceedingly gratifying to perceive the pigment manifest itself, thus rendering strong the probability that the supra-renal capsules were beginning to be involved in disease which would hasten on his dissolution. This opinion was corroborated by the autopsy.

"Under the microscope nothing definite was discovered to throw further light on the subject, although corpuscles, irregular cells, small portions of anaphous matter, and some oil granules were also found, and there was but a trace of healthy tissue left, while the whole of the medullary structure was gone."

These two cases are the only ones in which Dr. T. has been enabled to verify the diagnosis by post-mortem examinations. The histories of two other cases remaining in the hospital are given, in which the peculiar discoloration of the skin is well marked. The foregoing are, however, sufficient to convey to our readers a tolerably correct idea—so far as mere description can impart it—of its characteristics. The coloured lithographic illustrations, drawn from ambrotype likenesses of the four patients, picture it in the clearest manner.

Dr. T. remarks that his representations of the discoloration of the skin in these cases, differ somewhat from those given by Dr. Addison. This difference,

he adds, is still more apparent, when it is considered that he had the opportunity of observing the pigment deposit itself, in the second case, whilst under treatment for renal disease, and of noticing its commencement on the forehead, with a clear and distinctly marked line, and on the lips, and in another case which has only existed five weeks, and noticed by him one week before he came into the hospital, and in the first case, for three or four months previous to his admission, and in still another case; all of which presented the same sunburnt appearance, commencing from a light shade of tanning, and progressing to a darker hue. In the first case described, Dr. T. observes, the discoloration could not have occurred from the effects of the sun, as the patient had not been exposed to the sun for three or four months, and had not noticed the change of his skin till his attention was called to it, and from the length of time he was in the hospital, if that had been the cause, it should have become paler. Again: in the second case we were enabled to justify the opinion that the discoloration pointed to both capsules as the seat of the disease—for in all the kidney affections Dr. T. has seen, he never noticed this discoloration of the skin, showing that the capsules had become involved before death.

In the representations of Dr. Addison, there is no line of separation visible on the forehead; in his cases the pigment embraces the whole of the scalp and ears. This was not the case in the patient at the New York Hospital, in which the line of demarcation was very evident, and also the pigment on the lips, although the whole body is tinged of a mulatto colour. The general history of the cases corresponds with those of Dr. Addison, except the appearance of the skin, and the emaciated condition of all the patients, except one. Dr. Addison's plates represent a dirty brown or mulatto or West Indian colour, and all his cases have the scalp discolored except one, which appears to have been free, or not continued to the face by the lithographer, as the whole face is not given.

Referring to Dr. Hutchinson's comparison of the discoloration to that of a bronzed statue from which the gloss has been rubbed off, Dr. T. thinks that if this appearance of the skin were to be considered as that peculiar to the disease throughout its course, it would cause it to be overlooked in its early stage.

"From the cases reported by Dr. Addison and others, and my own, it will be remarked," says Dr. T., "that this affection may spring up whilst another disease is progressing, and that it may, and generally does exist as a disease by itself, that the disease, judging from the number of cases that have come under my observation in the course of two months' service in the hospital, cannot be very rare; that it must have existed in many cases which have never been recognized; that the discoloration may take place in rather a rapid manner, when the disease may be of an acute character, and that the discoloration may be gradual in its appearance, and become extensive when the disease is of a chronic character, and exist for, it may be, years, owing to the peculiar diathesis of the patient, whether of the tuberculous, or cancerous, or fibrous, as nearly allied to the rheumatic; that it requires a longer time for the development of the pigment when it becomes of the mulatto or West Indian hue, and more universal, while in the early stage it is like a person who is sunburnt; that the result of all the cases have proceeded to a fatal issue."

Including those of Dr. T., thirty-seven cases have been recorded; of these, eighteen were subjected to a post-mortem examination. In fourteen examinations, both supra-renal capsules were diseased, and in four, only one. In no instance, therefore, examined up to this period, in which the peculiar discoloration of the skin alluded to has been present was disease of the capsules absent. Dr. T. remarks that "not a single case has been noticed where these bodies were diseased, and the discoloration of the skin did not exist also." This we believe does not, however, correspond with the experience of Dr. Addison, who speaks of cases of individuals, who had presented no symptoms of anæmia or discoloration, dying of acute and chronic diseases, in whom decided lesions of the supra-renal capsules were detected.

From the morbid anatomy of the cases recorded, it appears that the supra-renal capsules undergo the same process of disease from an inflammatory action, through its regular changes, suppuration, and induration, and also

through the various organic changes incident to lymphatic and other glands, such as tubercle, cancer, cystic degeneration, and, as supposed by one or two authors lately, having a form of degeneration peculiar to themselves. From the evidence before us of eighteen post-mortem examinations, there have been more instances of tuberculous degeneration than of any other, and, as a general rule, Dr. T. is inclined to believe that when not of an acute nature, this result will characterize, most frequently, that form of degeneration, as this form of cachexia prevails more extensively than any other, except the cancerous, for the history, progress, and termination of the disease, show a cachectic condition and not anæmic, as described by Dr. Addison. On account of their vascularity, hemorrhage not unfrequently occurs. But it is rare to see a case in the inflammatory state, according to Rokitansky, as, in consequence of inflammation they become adherent to the kidneys.

"Respecting the diagnosis of the discoloration of the skin under consideration, there might be some difficulty," says Dr. T., "in arriving at a correct decision in the instances of persons who have been sunburnt. But in cases of this nature, the ears and the hair have undergone some change—which does not, in this disease, exist, in its early stages—as we have seen in all the instances I have recorded, and as many medical gentlemen have also observed, where the sunburnt appearance from nature exists. The general health is good, and the nervous system is not impaired; the lips free from the pigment which all the patients in this affection have. If the pigment on the face does not extend, or grow much darker, though otherwise having the characteristic marks, it is possible that only one of the capsules may be affected, and thus it may remain in this form for a great length of time, and the disease may be prolonged even to two or more years.

"In *pityriasis versicolor* the patches are smaller, not as diffused; show themselves on the breast, shoulders, partly on the neck, and existing sometimes slightly on the face—not unlike the freckles or discoloration in females during gestation—itches at times, and has also, sometimes, a slight furfuraceous scale; and, lastly, the presence of a microscopic fungus, similar in structure to the parasite of tenia favosa, and to other mycodermatous growths, of which discovery has been made by Eichstadt, and where this is sought for and found no doubt could exist; the history of the case must here be taken into consideration. Another source of difficulty might seem to be the dirty, sallow appearance of the skin in miasmatic, and in various forms of malignant cachectic disease, but to the early stage there can be no comparison; and, in the advanced stage, the colour is so marked that it would not admit of error."

In one of the cases reported by Dr. T., a microscopic examination of the skin was made by Dr. J. C. Dalton, Jr., from which it appears that the colouring matter was deposited in a granular form, and could not be distinguished from that of the mulatto, and it is believed that the colour of the mulatto is dependent upon a special arrangement in the organization of a certain tissue of the skin, that pigment-cells of a dark colour are secreted in the form of fine granular matter, instead of being uniformly diffused through the tissues.

That some connection exists between the discoloration of the skin in question and disease of the supra-renal capsules, would appear to be an inevitable conclusion from the fact that, in every instance in which a post-mortem examination has been made, the two have been found coincident. But, whether such a conclusion shall become finally established by the result of a more extended series of observations it is difficult to say. It is possible that the discoloration of the skin may be an effect of the accompanying lesions of the supra-renal capsules, but still it is far from being improbable, that the first may be shown by further researches to be a phenomenon merely coincident or of simultaneous occurrence with the latter, without being actually produced by them. We owe much, in whatever way this question may be finally settled, to Dr. Addison, for having directed the attention of the profession to the fact of the invariable coincidence of a peculiar discoloration of the skin with disease of the supra-renal capsule, and to Dr. Taylor for his valuable contribution on the same subject, especially for his very clear delineation of the characteristics of

that discoloration on its first occurrence, as "an early diagnostic symptom of disease of the capsules."

An important question presents itself: Does the invariable coincidence of a special change in the colour of the skin with lesions of the supra-renal capsules, afford us any clue to an acquaintance with the functions performed by the latter?

At the present day, observes Dr. T., the function of these organs is not recognized, nor has any light been thrown on their physiology. Kölliker, who has given more attention to them than any other physiologist of the present day, believes, it is true, that their *cortical* and *medullary* substance are *functionally* distinct; that while the former may provisionally be placed with the so termed "blood vascular organs," and a relation to secretion assigned to it, while the medullary portion, on account of its extremely abundant supply of nerves, must be regarded as an apparatus appertaining to the nervous system, in which the cellular elements and the nervous plexus either exert the same reciprocal action as they do in the gray substance, or stand in the relation as yet wholly unascertained towards each other. Leydig joins with Bergman in believing that these capsules are closely related to the ganglia of the sympathetic nerves, as the pituitary body are to the brain.

"In connection," Dr. T. goes on to say, "with the present subject of the pigment which we notice existing on the skin of patients labouring under disease of the capsules, and the great impression made on the nervous system, as we perceive through the marked impairment of the physical constitution, the weakness and feebleness of the powers of the body, the general lassitude that exists, the feeble and slow action of mind, the stupid manner and expression of thought, the unearthly and sickly aspect of the eye, the mode of death, either by exhaustion, as in cases of advanced anæmia, or through the cerebro-spinal axis, or by coma, we are disposed to entertain the belief or opinion, that if the suggestion of Professor Kölliker be true "that the cortical and medullary substances are physiologically distinct," it may or will, in the course of time, cast much light on the subject, and aid in solving the principal feature of the case, why and how this pigment is deposited, and its relation to the supra-renal capsules. Now, if, as we perceive in this disease, the nervous system is so much involved, the body and mind both impaired and depressed, when the affection has existed for a few months, and the medullary substance is considered as being nearly allied in its function and relation to the nervous tissue, I would suggest this part as being physiologically distinct from the cortical, and to be the '*fons et origo*' of this depressed and impaired state of the nervous system. On the other hand, as the cortical substance is believed to belong to the 'blood vascular organs,' may this not be the '*fons et origo*' of the pigment we see so distinctly evident on the skin? It seems to give colour to the appearance of a tendency to an elucidation of the difficulties involved in the relation the discoloration bears to the disease of the supra-renal capsules. But we leave this point for further investigation, though the idea may be entertained, as the physiology of the organs is considered not yet determined, and their function, according to the latest authority on the subject, unknown. From the facts, therefore, lately presented to our attention by Dr. Addison, and which have in so many instances thus far been verified, that there appears to be a relation or connection between the discoloration of the skin and the capsules, the thought presents itself to my mind, whether it may not be possible that a still further application of the subject in the discoloration of the skin, which we see in gestation, on the face, hands, around the nipple, the abdominal line, navel, vulva, etc. etc., may not have some connection with these bodies, though of a temporary nature; I think the suggestion has some bearing, when we come to reflect on the connection or relation pregnancy has with the kidneys, producing in them a temporary congestion, and to such an extent that albumen may be deposited in the urine, and produce convulsions, as is sometimes the case. Now, this temporary congestion of the kidney during gestation, may exist as early as the first week, and, therefore, proceed not from mechanical pressure on the principal arterial and venous vessels, as is generally supposed. An instance of this nature has lately come under my obser-

vation, where the skin had continued to be deprived of its natural function for two months, and albumen was discovered to exist, though the lady was only advanced two months and one week, and, while under treatment, in the course of two weeks ceased to exist, and still continues free from it. If, therefore, the kidneys become congested during gestation, even in its very early stage, may it not be possible, from the contiguity of the supra-renal capsules, they may become involved, or may they not, themselves, become slightly affected, as we perceive other organs do in this state; sufficiently so to allow the discoloration incident to pregnancy, to exhibit itself? It seems to me there is a feasibility in the suggestion that may admit of further illustration from the remarks we have made; and from the investigations of Meckel on the mammalia, and his observations on the human subject, and the case of Otto and others, showing the relation they both bear to the genital and uterine organs; but the further, and, as I conceive, the more valuable suggestions of Kölliker, respecting the physiological action of the two portions of these bodies being distinct, and which we are disposed to think may, in future, tend much to explain the reason how this pigment is deposited, and its connection to the supra-renal capsules. Now, if this should prove to be the reason why this discoloration exists, and in gestation also, may it not explain the reason why the nervous system is affected when albumen is discovered in the urine, and that instead, as some have believed, and which I have not yet been disposed to be fully convinced of, that instead of urea being the cause of the convulsions, it may be possible that the medullary part of the supra-renal capsule is involved?"

We consider the publication of Dr. Taylor as one of deep interest—furnishing a valuable addition to our stock of pathological knowledge. He has, unfortunately, clothed his observations in a style often so clumsy and obscure, as to render it, occasionally, difficult to arrive at his true meaning.

D. F. C.

ART. XXV.—*Essays on the Physiology of the Nervous System, with an Appendix on Hydrophobia.* By BENJAMIN HASKELL, M. D., of Rockport, Mass. 8vo. pp. 88. Gloucester, Mass., 1856.

WHAT is life? Is it the mere result of organization; a power generated by the arrangement of molecules, of a certain chemical constitution, in a particular form and manner? Or does it exist prior to and independent of the organism which is created, developed, sustained, and governed by it? For the solution of this question, we in vain interrogate the physiologist; he has been unable, as yet, with all his multiplied and varied experiments, and his most profound researches, to throw upon it the slightest amount of light. Nor has he been any more successful in his attempts to elucidate the nature of nerve-force, of which so much use has been made, of late years, in accounting for the phenomena of life, as they occur, whether in the normal condition, or in a state of disease. Is this force identical with the living power or principle, or is it simply the agent through which that power or principle builds up organic structures, prompts, directs, and controls their actions, and thus produces all the functions of the living system? Who among us can give a satisfactory reply?

That the nerves perform a prominent and important office in the animal economy is indisputable; but in regard to what that office is, and how executed, we as yet know but little, if anything. We may theorize, and attempt to support our theories by a long array of apparent facts deduced from experiments and observations, but still we have in candour to confess that our actual knowledge in relation to the subject is limited and uncertain.

The doctrine now generally acknowledged by physiologists as the one based upon the most conclusive evidence is, that all mental affections, all active vital phenomena, are inherent in and dependent on the specific vital endowment of nerves.

"It is by virtue of a specific vital endowment of the optic nerve," we are taught, "that, when light is impressed on the retina, we are affected with the sensation of colour; by a similar endowment of the auditory nerve, when the vibrations of the air reach the internal ear, we are affected with the sensations of sound; another of the olfactory, to which we owe the sensations of odour; a fourth endowment of the gustatory, to which we owe the sensations of taste; a fifth, imparted to the nerves distributed to the skin and the posterior portion of the spinal marrow, gives the sensations of touch. The nerves that go to the muscles and the anterior portion of the spinal marrow have a motor endowment, of which the muscles are contracted, while the central portion has its reflex endowment. The power of breathing and the power of swallowing are inherent properties of the medulla oblongata. And as all these sensations of sight, hearing, taste, &c., are as much affections of mind as thoughts, emotions, and passions, and since no connection between the structure or vital actions of the nerves, and these sensations can be traced, or even conceived, the mechanical relations in which indeed they differ, being such as are accommodated to the physical causes acting upon them from without, it is perfectly consistent and legitimate to transpose this reasoning to the brain, and the mind in its higher faculties. The brain being a huge congeries of nerves of the same character as those of the superficies, any number of vital endowments may be predicated of it; and as the brain is not directly operated on by external or mechanical causes, there is no need of a mechanical division into parts distinct to the senses, as in the former case, in order that the analogy may hold. Not merely, then, are sensation, thought, volition, judgment, memory, imagination, with the passions and propensities, referable to vital powers or endowments of parts of the brain, but all the phrenological faculties, with their craniological organs, coupled with all the additions that the phreno-mesmerizers have made, are perfectly consistent with this philosophy.

"A moment's reflection," it is remarked by Dr. Haskell, "must satisfy any one that this doctrine is neither more nor less than materialism. If all the mental affections, from sensation up to thought (and there is no stopping point from the admission of one to the admission of the whole), are dependent on properties of nerves or of the brain, to suppose the existence of mind, soul, or spiritual principle, capable of sensation, feeling, or thought, is superfluous. We have no use for it in connection with the body, nor can we conceive of its enduring after death. When the nerves and brain crumble to dust, those vital endowments, dependent on their organizations, disappear along with them."

This doctrine Dr. H. has undertaken to disprove, and to substitute in its place a view of the nature and office of the nervous system in the human body, in which it is maintained that the supposed vital endowments of nerves are but another name for mental powers or activities associated with the physical activities of nerves. In other words, that the phenomena of life are the direct product of the mental powers, in obedience to the calls made upon those powers through the nerves; that these mental powers are diffused throughout the organism, which owes to them its origin and maintenance; and that to them the nerves serve merely as media for the communication of sensations, by which those powers are called into specific action, in accordance with the character of the sensations transmitted to them.

In the essay before us, Dr. H. has endeavoured to show that the received doctrine is false, inasmuch as—

"1. It is opposed to the general analogy of nature.

"2. It is opposed to the analogy of the other organs and organic systems in the body.

"3. It is contradicted by the structure of the nervous system, by the mechanical relations of its several parts to each other and to other organs, and by the nature of the causes operating physiologically to excite its functional activity, or pathologically to disturb it.

"4. It violates the law of proportion between the size of the nervous centres and the complexity of their functions, by assigning very complicated functions, in higher animals, to parts in which the same size is preserved as in the corre-

sponding parts of lower animals, in which the analogous function is extremely simple.

"5. In order to preserve its consistency, it denies to the invertebrated class of animals mental qualities which they most certainly possess. Thus Carpenter, while he allows intelligence to beasts, birds, and fishes, denies it to ants, bees, and spiders, because they have no brain.

"6. The persistence of a function after the destruction of the organ on whose vital endowment that function depended, as the continuance of the power of voluntary motion after the destruction of the whole anterior part of the spinal marrow—a fact admitted, and of a positive character—is a decided refutation of the whole theory.

"7. The mechanism of voluntary motion which it sets forth is absurd.

"8. The distribution it makes of the sensitive properties throughout the nerves is unphilosophical.

"9. It fails to account for *all* the phenomena which take place in the human body, and which are usually referred to the nervous system; such events as shock, sudden loss of vitality, and many of the phenomena of sympathy, remaining unaccounted for by it.

"10. The inconsistencies and contradictions of those who undertake to investigate and fix these vital endowments of nerves and nervous centres by means of physiological experiments and pathological observations are such as could not take place, did they possess the true key to the explanation of the facts which they witness.

"11. A comparison of the phenomena of association with those of instinct will show that the apparent fixedness of the sensibilities of the specific and other nerves can be explained as well by regarding them as mental faculties instinctively associated with physical excitements of nerves, as by supposing them due to inherent properties of the nerves themselves; and if so, the supposition of the existence of such properties is a gratuitous assumption.

"12. With regard to the well-known fact that when the cut end of a motor nerve, so called, is irritated, the muscle with which it is connected contracts—by far the strongest argument in favour of the doctrine of vital endowments—if we adopt a view of the nature of the union of the mind with the body which has been held by many of the most distinguished ancient as well as modern philosophers, viz: 'that the mind is all in the whole body, and all in every of its parts,' instead of locating it in the brain or in any other part, we can then conceive of a mental act intervening between the excitement of the cut end of the nerve and the contraction of the connected muscle, on which, and not on any property of the nerve, the effect is due.

"13. Finally, of those facts which have loosely been held to prove that the brain is the organ of the mind—such as the correspondence between the size of the brain and the intellect of the species or of the individual; the sense of fatigue in the head that follows long continued exercise of the mind; delirium attending an excited condition of the nervous system; impairment of the memory in disease of the brain; loss of the powers of sensation, volition, and consciousness in concussion and compression of the brain—they only serve to show a connection, perhaps fortuitous, between the functional activity of the brain and the exercise of the mind. Sensation and volitional guidance of the contractions of the muscles are both intellectual operations; and as the activity of the brain is necessary to those, so it becomes associated with, and is favourable to, the activity of all the intellectual faculties."

The foregoing objections are enforced and illustrated in the course of the three essays of which the volume before us is composed, often with great acuteness. The objections of Dr. H. to the commonly received doctrines of the physiology of the nerves are, in general, of far greater force than his arguments in support of his own peculiar views are conclusive. In relation to the latter, there are many points he would have us take as proved from his simple statement of them. The truth of them all is based upon the plea that they afford a more clear and ready explanation of the action and functions of the nervous system than the doctrines in the place of which they are offered, rather than upon any attempt he has made to demonstrate their absolute truth.

It would lead us too far, and demand too much space, to follow Dr. H. in his exposition of the various errors, contradictions, and inconsistencies into which he finds the most ingenious minds have been led by adopting and following out the prevailing theory of the vital endowments of nerves, and his attempt to prove that the doctrine which he has proposed, while it accounts satisfactorily for every fact which the former does, explains, in addition, many which that does not reach, besides others which are in direct contradiction to it.

His examination of the received theory of nervous physiology, and the entire chain of reasoning adduced by him in support of his own views, are deserving of consideration; they are marked often by a degree of acuteness which, though not sufficient perhaps to enforce our acceptance of the theory he would build up, cannot fail, nevertheless, to shake in some degree the implicit faith reposed in the views of nervous action and function taught by the leading physiologists of our own and other countries.

The doctrine advanced by Dr. H. is but a modification, and perhaps improvement, of some of the more ancient theories invented to account for the vital endowments and phenomena of living organized matter. All that is original with him is the attempt to connect the old doctrine with certain known facts in relation to the anatomical peculiarities of the nervous system for which we have been mainly indebted to modern investigations.

It must be admitted that the theory of Dr. H. accounts very readily for the production of all the actions and functions of the animal organism, and relieves us of many of the difficulties by which the explanation of certain of the actions and functions is surrounded upon the assumption of the vital endowment of nerves; in other words, that every act of the living tissues and organs, if not the direct result of specific nerve influence, is so controlled by such influence as to derive from it its efficiency in completing the chain of vital actions. Consistent, however, and convenient as is the theory in question, it is, after all, based upon nothing more substantial than pure hypothesis. It is simply the expression, in different words, of the assumed position that living organs act in a determinate manner, spontaneously, by virtue of their inherent vitality in connection with their physical structure, when called into action by certain impulses communicated to them through the medium of the nerves as mere conductors of impulses or impressions. This explanation of vital phenomena and function may remove some of the difficulties with which our present views of these phenomena and function are beset, but it removes them only by the arbitrary assumption of a hypothesis, the truth of which is unsupported by other evidence, unless such as may be supposed to result from its convenience.

It is true that, when we take the diagram presented by Dr. H. on page 72 of his publication, with his explanation of the manner in which by it nerve-agency is demonstrated, all appears plain and satisfactory; but then we are to recollect that this very diagram is a mere creature of the imagination; its accuracy as an exponent of a presumed nervous circle, as it exists in the living body, still remains to be proved.

We are not displeased that the essays before us have been written and published, and would invite for them a candid perusal. They throughout present much, in reference to the subject of which they treat, of an eminently suggestive character, and may perchance offer a clue which, carefully and cautiously followed out, shall lead to a correct theory of the office of the entire nervous system. At present, we are unprepared to construct such a theory. We have still to wait patiently; to collect, verify, and compare carefully the facts demanded for the accomplishment of the work; and, step by step, as materials are supplied us, endeavour to lay for it a broad and stable foundation. Truth can rarely be attained by adopting first an hypothesis, and then labouring to cause apparently discordant facts, and the conflicting conclusions to which these have led, to conform to it.

In the appendix, Dr. H. has furnished us with some remarks on the pathology and treatment of hydrophobia. He considers the disease in the human subject to result from the insertion, by the bite of a rabid animal, of a specific virus, which, after a period of incubation, often of considerable duration, gives rise to an irritation or inflammation of the part in which it has been inserted, followed

more or less speedily by inflammation of the posterior fauces and larynx, which in its turn is succeeded by inflammation of the spinal cord, especially that portion of it where the nerves of deglutition and respiration terminate. He would, therefore suggest to physicians who may be called upon to treat hydrophobia, that "it is a disease of a mixed local and general nature, having two foci of inflammation and constitutional irritation, a primary and a secondary one; and that, while the constitutional symptoms should not be neglected, the main hope of arresting its dreadful fatality consists in applying remedies to these seats of inflammation; and he would further suggest, from the known efficacy of nitrate of silver in various diseases"—as an abortive agent—"that its application, in a strong solution, to the whole surface of the pharynx, fauces, and mouth, as far as practicable, at an early period—that of commencing spasm—affords a hope of successful, while it can be productive of no injurious, results."

This, with tonics, quinia in large doses, internally; laudanum, in injections, in such doses and at such intervals as to keep the patient in a state approaching to narcotism; tobacco, in the form of smoke, by the rectum; an opium, belladonna, or snuff plaster to the throat, or nape of the neck, with light nourishment from time to time, if the disease is protracted, constitutes the treatment recommended by Dr. H.—hypothetically, however, inasmuch as he has not met with a case of the disease. D. F. C.

ART. XXVI.—*The Practical Anatomist; or the Student's Guide in the Dissecting-Room.* By J. M. ALLEN, M. D., late Professor of Anatomy in the Medical Department of Pennsylvania College, Fellow of the College of Physicians, Member of the Academy of Natural Sciences, &c., with two hundred and sixty-six illustrations. Philadelphia: Blanchard & Lea, 1856.

"Segnius irritant animos demissa per aurem,
Quam quæ sunt oculis subjecta fidelibus."

To no department of our science are these oft quoted lines of the Sabine bard more applicable than to that of anatomy. A merely didactic description of the intricate and varied structure of the human organism can leave but a faint impression on the mind of the pupil, while in many instances it altogether fails to convey correct ideas of what is attempted to be taught. Hence the necessity of positive labour in the dissecting-room, under the superversion of intelligent demonstrators whose special devotion to its study has made the subject in all its details familiar to them.

But here, and still more when deprived of this supervision, text-books are indispensable, and among the most valuable of these we scarcely need mention the Dublin Dissector, which for so many years has justly commanded the approbation of the profession.

To write a book, however, which, while it shall avoid much of the cumbrous detail of a complete system of anatomy, shall yet contain all that is necessary for the dissector, requires no little tact and judgment. Such we believe to have been the successful endeavour of the author of the work before us. His book is a manual of about six hundred pages, printed in clear type and in a convenient form.

A few pages are occupied with some judicious preliminary remarks, after which the subject matter is at once entered on, beginning, as is usual, with the dissection of the head and neck. The descriptions, so far as we have examined, appear to us to be conveyed in clear, concise, and forcible language, well suited to the wants of the learner, while the numerous illustrations will at once enable him to localize in the actual subject the parts, &c., described in the context.

We have been particularly pleased with section 7th, which contains a description of the dissection of the eyeball, the text and illustrations of which are very lucid. So too with the description of the liver and its appendages; the muscles of the perineum, &c. &c.

As we have intimated, the work abounds in illustrations. Many of these, it is true, are not new, a fact which is frankly mentioned by the author, who states in his preface that the publishers gave him "*carte blanche* to select from the whole number of drawings contained in the various works published by them." If the illustrations consequently manifest their diversified origin, the want of uniformity thus resulting is more than compensated for by the increased practical value so many illustrations must give to the book.

As a guide to the dissector, whether he be the pupil in his first year's course, or the practitioner seeking to refresh his knowledge of anatomy, this volume will be found to be of much valuable assistance.

ART. XXVII.—*An Outline of Medical Chemistry for the use of Students.* By B. HOWARD RAND, M. D., Professor of Chemistry in the Philadelphia College of Medicine. Philadelphia: Lindsay & Blakiston, 1855.

An Introduction to Practical Chemistry, including Analysis. By JOHN E. BOWMAN, F. C. S., Professor of Practical Chemistry in King's College, London, &c. Second American from the second and revised London edition. Philadelphia: Blanchard & Lea, 1856.

A Practical Handbook of Medical Chemistry. By JOHN E. BOWMAN, F. C. S., Professor of Practical Chemistry in King's College, London, &c. Second American from the third and revised London edition, with illustrations. Philadelphia: Blanchard & Lea, 1855.

THE increasing attention to chemistry and the constant contributions of new facts and improved modes of investigation in the inorganic and organic portions, together with the different views taken as to the best methods of communicating to others the principles and practices of the science, leads to the production of new, and the frequent revision of former editions of less recent publications. The above works, though differing in character and object, have been placed together as all relating to the same general subjects.

The first of these works is intended as an outline of general chemistry and its application to medicine. It has been the view of the author to give all the prominent facts of the science, as far as necessary to the student, in following a course of lectures on this subject. With this view the language is very succinct, and detail is avoided except where officinal preparations are noticed. Thus constructed the book becomes an aid to a course of lectures, or as a means of reviving knowledge previously attained, the rapid survey precluding any detail, which is left to the filling up of the outline, by a systematic course of instruction. In accomplishing this, two difficulties lie in the way: one, clearness being sacrificed to brevity, and the other, by omissions of words rendering the statements incorrect either in reality or appearance. The former has in a great measure been avoided, but in the latter the success has not been so great. Instances of this may be adduced in the preparation of German oil of vitriol, where, previously exposed for some time to air, is required, and of the latter, where speaking of muriatic acid gas, it is said "By pressure condensed into a liquid; specific gravity 1.27;" where, if the one sentence had been divided into two, the student would not have been left in doubt whether the weight applied to the liquid formed by condensation or the gas itself. A glossary is appended which will be very useful to the beginner, who frequently finds it difficult to remember words to which his ear is not accustomed, unless the precise meaning is taken in at the same time. These oversights are, however, but few, and can be easily corrected in the next edition, when also an index is required to facilitate reference when it is required to revive the knowledge on any particular point.

The latter two are new editions of works intended to convey instruction of a practical character; the instruments, their mode of construction, and the details of their use in these investigations, being described and illustrated so as to be

adapted to guide the student in the commencement of his career of study. We have heretofore expressed our opinion as favourable to the general end in view in the selection of apparatus of the most simple character, and the clear directions for their use, and it is now only necessary to allude to such improvements as may be presented in the editions now offered. The Introduction to Practical Chemistry is well arranged, and as full in its details as can generally be desired, and hence presents nothing of novelty in these respects. But investigations in organic products are constantly developing some new, or rendering more prominent some hitherto not sufficiently noticed facts, and more direct and simple methods of proceeding are devised, consequently the Practical Handbook of Medical Chemistry should contain such recent additions to organic chemistry as are embraced in the scope of the work. Of these Maumené's test for sugar is given under morbid urine. This, at the same time that it is very delicate, is very easy to perform, and the reagent, though not usually to be met with in the shops, is readily prepared, and being liable to but little change, may be kept on hand for general use, is a desirable addition to the means already attainable for the same end. To the means of investigating the changes in the composition of urine, that proposed by Liebig to ascertain the amount of urea present in any portion of that fluid by means of the nitrate of mercury, with which it forms a nearly insoluble compound, is one of much practical value in the hands of the physician, after he has familiarized himself with the mode of procedure by a few preliminary trials. To facilitate its use, minute details are given of the method of preparing the different solutions used, the apparatus necessary, and the mode of procedure, and the precautions necessary for an accurate result. With these as the principal additions, the work has been brought up to the present state of the science, and continues to deserve the same favour that it has previously received.

Art. XXVIII.—*Sea-Sickness: its Cause, Nature, Symptoms, and Treatment, derived from Experience and Strict Observation.* By Ml. Nelken, Doctor Medicinæ of the Faculty of Medicine in Paris, France, of the Faculty of Medicine in Wurzburg, Bavaria, and Resident Surgeon in the New York State Hospital, Ward's Island. 8vo. pp. 32. New York, 1856: Stringer & Townsend.

Although to those who "go down upon the sea in ships," the sickness produced by the motion of the vessel is a source always of great annoyance and generally of no trifling suffering, it has unfortunately attracted but little attention from the medical profession. Few have attempted a careful investigation of its true character and immediate cause. This has arisen, no doubt, from the fact that sea-sickness is a troublesome rather than a dangerous disease, and one most commonly of only temporary duration, and which ceases spontaneously upon the removal of its exciting cause.

It is true, we have been favoured with various speculations in explanation of the manner in which sea-sickness is produced. It has been referred to a sympathy between the brain and peripheral nerves, to an irritation of the optic nerves, caused by the apparent vacillatory motion of everything around the vessel, to a sanguine congestion of the brain, produced by the derangement of the centre of gravity during the pitching forward of the vessel, to a sanguine depletion of the brain resulting from a centrifugal force called into action within the bloodvessels, in consequence of the oscillatory motion of the ship, and to a miasmatic intoxication. Dr. Darwin referred the production of sea-sickness to a disturbance of the brain consequent upon the unusual impression produced upon the vision by the movements of the vessel, which opinion is adopted by Dr. E. Miller, of New York, to whom we are indebted for a very excellent monograph upon the subject; he extended the explanation so as to embrace the sense

of touch as well as that of sight. Good considers sea-sickness to be produced by a disturbance of the sensorial function, caused by the direct impression made upon the brain by the motion of a vessel at sea. Vertigo, sickness of stomach, and vomiting, are the most common effects of concussion of the brain, or even of any slighter motion to which the head has been unaccustomed, as that of moving it rapidly from shoulder to shoulder in a half rotatory direction; from the same cause results the vertigo and distressing nausea and vomiting induced by whirling the body around on its own axis, by running, or by riding a horse round a small circle, by the action of swinging or of riding backward in a carriage, etc.

As little satisfactory are the views that have been advanced in respect to the proper management of sea-sickness. Emetics, purgatives, antacids, aromatics, opiates, and stimulants, have all been in turn recommended and condemned.

It was, therefore, with strong hopes of meeting with a more complete and satisfactory account of the immediate cause and true pathological character of the disease, and of the best mode of treating it, that we commenced the perusal of the essay of Dr. Nelken. As surgeon on board a ship, in its passage from London to New York, of seven weeks' duration, with five hundred and sixty passengers, of almost every age and of both sexes on board; among whom, in consequence of the rough and stormy weather they encountered, there prevailed much sea-sickness; the author had ample opportunity "to investigate the disease closely and minutely." From the commencement of the voyage his attention, he informs us, was directed to all that was going on within their little sphere, keeping a watchful eye upon each patient, and observing and recording daily each symptom and incident having reference to the disease in question. "Prepossessed with no hypothetical theory on the subject, he confined his study to mere facts, keeping free from any tendency to seek explanation, and resolving not to adopt any opinion unless imposed by facts or the result of actual and close investigation."

The essay before us is the result of Dr. N.'s careful study of the disease under these most favourable circumstances. We had a right, therefore, to expect from it a more accurate delineation of its characteristics, a more satisfactory exposition of its pathology, and something more certain in regard to its alleviation and cure than what we were already in possession of. We regret, however, to say that this reasonable expectation has been disappointed. We find scarcely a single idea of any importance that is strictly new. The description given by the author of the disease, its symptoms, progress, and results, according as it occurs in patients of different ages, sexes, and constitution, is more full and accurate than we meet with in the few books where it is formally treated of, but in all else the author has been anticipated by Dr. E. Miller, whose monograph on sea-sickness was published in 1814.

Dr. Nelken's pathology of sea-sickness is given in the following words:—

"The long-continued and violent motion of the ship communicates its disturbing influence simultaneously to all the viscera and organs contained within the abdomen, thorax, cranium, and spinal column—that according to the idiosyncrasy—in other words, to the peculiar structure and impressibility of the ganglion, pneumogastric, and cerebro-spinal systems of nerves in different individuals, various symptoms manifest themselves. Thus with some it is the cerebro-spinal nervous system which seems most affected. The patient then suffers chiefly from dizziness. With others, it is the pneumogastric nerves which appear to be most impressed, and we then observe vomiting and difficulty of respiration as the consequence of their derangement. Again, with others, the effects of the general disturbance seem to bear particularly upon the ganglionic nerves, and result either in dyspepsia, diarrhœa, or constipation. Finally, several of these various systems of nerves may be simultaneously and equally affected, and sea-sickness then develops itself, as it has been seen in the symptomatology, under its combined or complicated forms."

This is but the theory of Dr. Good somewhat developed, but by that development brought somewhat nearer to the truth. We do not believe that the mere impression made upon the visual and external sentient organs by the motion,

apparent and real, of the ship and surrounding objects, is the producing cause of sea-sickness. We know, that by merely closing the eyes, we cannot, as Darwin and Miller suppose, ward off an attack; the fact is, that to remain as much as possible on deck "in all varieties of weather," where the "instability and unaccustomed movements of all objects upon the water," as well as the motions of the vessel itself, must necessarily be experienced to the greatest extent, is admitted on all hands to be one of the best means of preventing sea-sickness, or of allaying it after it has occurred.

Dr. Nelken's plan of treatment is to remove diarrhœa, when present, by the use of mucilaginous and aromatic drinks, or, in obstinate cases, by opiates, and to counteract costiveness, when it exists, by purgatives adapted to the obstinacy of the symptom and the constitution of the patient.

To allay vertigo and vomiting he has no confidence in aromatics or effervescent drinks, ether, or chloroform; while strychnine he ranks as much inferior to the remedy, of which we subjoin his own account.

"After frequently observing," he remarks, "that the stomach, in most of the patients, is momentarily quieted upon the ingestion of food, and that sleep affords them relief, I finally determined upon the possibility of an efficient treatment. I directed my attention, in particular, upon the whole series of narcotics, and selected morphine as the most suitable, and used it subsequently, in many cases, both for giddiness and vomiting, with entire success. I gave it in the dose of half a grain twice a day. In severe cases, and with some individuals, the dose must be increased. But in such cases great circumspection and care are required in its management. The relief afforded to the patient from the use of this narcotic does not generally last more than from twelve to twenty-four hours. With the return of the symptoms, giddiness and vomiting, the morphine must be resumed again.

"The *position* of the patient deserves equally to be taken into consideration—the horizontal proving much more agreeable than the erect posture, as it better supports the stomach, intestines, and all other internal viscera, and prevents thereby, to a certain degree, their too great disturbance by the oscillation of the vessel. For the same reason, an abdominal supporter, made in a manner to cover the whole abdomen, and to offer a certain degree of resistance, proves also highly serviceable."

In respect to diet, Dr. N. objects equally to abstinence, and to too great an indulgence in food.

"A generous diet," he observes, "that is, substantial and succulent food, easy of digestion, with the addition of a little brandy or wine, according to the habit of the patient, is undoubtedly the most befitting and useful. Such a regimen is nourishing and strengthening, does not oppress the stomach, but acts somewhat as a soothing or sedative remedy; in other words, *settles* the stomach. Sweetened water, with the addition of lemon-juice, or a little citric or tartaric acid, forms a grateful beverage, much enjoyed by the sea-sick. Remaining in the open air on deck, where the shock of the vessel is somewhat modified, is of undeniable service."

The treatise of Dr. N. presents, confessedly, a very good succinct account of the pathology and treatment of sea-sickness. With the exception of a more detailed account of its symptoms, his amplification of the views of Good as to the mode of its production, and his suggestions as to its treatment by morphine, we find, however, nothing whatever in it that is not much better told in the monograph of Dr. Edward Miller, published upwards of forty-two years ago. It is somewhat surprising that this well-known monograph is omitted from the list appended by Dr. N. "of all the articles or treatises heretofore published on the subject." The fact is, with a very little research, that list might be considerably increased.

D. F. C.

ART. XXIX.—*Ueber die Heilwirkungen des Constanten Galvanischen Stromes bei Contracturen, Lähmungen, und Atrophien der Muskeln.* Von R. REMAK, M. D. Abdruch aus Göschen's "Deutscher Klinik;" No. 35, vom. 30 August, 1856.

On the Curative Powers of the Continuous Galvanic Current in Contractions, Palsy, and Atrophy of the Muscles. By ROBERT REMAK, M. D. Extracted from *Göschen's German Clinic*, No. 35, for August, 1856.

Sur l'Action Physiologique et Thérapeutique du Courant Galvanique Constant sur les Nerfs et les Muscles de l'Homme. Par M. R. REMAK.

Note additionelle au Mémoire sur l'Action Physiologique et Thérapeutique du Courant Constant sur les Nerfs et les Muscles de l'Homme. Par M. R. REMAK. *Extraits des Comptes Rendus des Séances de l'Académie des Sciences*, tome XLIII., Séances du 22 Septembre, et du 29 Septembre, 1856.

On the Physiological and Therapeutic action of the Continued Galvanic Current on the Nerves and Muscles of Man. By R. REMAK.

Additional Note to the above Memoir. By R. REMAK. *From the Comptes Rendus of the Sessions of the Academy of Sciences.*

EXPERIENCE has, by no means, as yet, confirmed the expectations which were by many indulged in, that in galvanism we should find a remedy adapted to the relief, if not the entire cure, of the various chronic affections of the nervous centres. Though at first sight galvanism would appear to be, unquestionably, an appropriate and certain excitant of nervous action in cases in which this was absent or deficient, yet in the larger number of instances where it has been tried, in a manner and with a perseverance that should apparently warrant success, either no good effects, or those only of a temporary character, have been derived from its application. Whether this has arisen from the fact of the actual inefficiency of galvanism in the cases in which it has been tried, or the injudicious and unskilful mode of its application, is still a proper subject of inquiry.

Recently Dr. Remak, of Berlin, has drawn the attention of the profession in Germany to the curative powers of galvanism, in a variety of diseased conditions of the muscles, over which the physician has, heretofore, had but little control, when methodically applied, and in a continuous current. He has published, in the medical periodicals of Germany, several communications on the subject, which, though they are replete with statements of a somewhat surprising character, yet, from the well-known character and standing of Dr. Remak, demand our serious consideration. Certainly, should general experience confirm the observations reported by him in reference to the curative powers of a continuous stream of galvanism in contractions, palsy, and atrophy of the muscles, he deserves the grateful thanks of the entire medical profession, for having placed at their command a remedial agent of almost miraculous efficacy for the removal of morbid conditions against which the curative means in their possession have heretofore proved powerless.

A communication from Dr. Remak "on the relaxation of paralytic contractions by means of a continuous galvanic current," was published in the number of the *German Clinic* for July, 1856.

"Scarcely," he remarks, in the essay before us, "had that communication gone to press, when, in treating a case of hemiplegia, with muscular contraction, in a female, I made an observation which gave a new direction to my investigations. I remarked that, upon directing the galvanic current through the anterior portion of the muscles of the shoulder, the patient not only regained entire command over these muscles, but that the extensor muscles of the hand, which had been entirely paralyzed, became involuntarily and forcibly contracted. Thus, by this case, was the methodical employment of the tonic reflex, and central alternative movements, which I had demonstrated in my own person, manifested and exemplified."

We are unable to present to our readers any explanation of the exact import

of the foregoing words, or their application as a guide to the proper employment of the galvanic current. The subject to which they refer was reported by Dr. Remak, in the 25th number of the *German Clinic*, which we have not seen.

"It will be conceived," continues Dr. R., "that after the observation referred to, I felt desirous of establishing its full bearing in numerous cases of disease. Notwithstanding Dr. Romberg and other physicians, to enable me to do this, had the kindness to send me patients, yet as these were not sufficient for my purpose, I inserted, in the Berlin papers, an invitation to those afflicted with the diseases in which I was desirous of testing the effects of the methodical application of the galvanic current, to apply to me. The sick, in consequence, flocked to me with inconceivable confidence. Many who had for years been pronounced incurable, and of whom some had not, for a long period, sought for relief. Thus I have been enabled, in the space of six weeks, to examine nearly four hundred cases of the rarest kind, and to apply to two hundred galvanism in a continuous current. About one-third of these—contractions with central palsy—have been cured, about one-third are still under treatment—the most of them improved—while of one-third the treatment has, for various causes, chiefly want of time, been delayed."

In an article contained in another medical journal, Dr. Remak observes:—

"I had fully intended, in conformity with a statement recently made in this journal, to give, without delay, some further explanations in respect to the methodical employment of the continuous galvanic current, as discovered by me for the cure of palsy and other diseases of the nerves and muscles; my proposed communication has not been before presented, because the sphere of the curative powers of the continuous galvanic current was daily enlarging; its full extent has even now not been reached.

"The relaxation of paralytic contractions, constituted, as is well known, its first difficult achievement; to this are to be now added, as its daily and well-established results, the solution of rheumatic and gouty contractions, and the allaying of rheumatic pains. As a means for the removal of contractions of the muscles of the chest and back, and of thus enlarging the capacity of the thorax, and removing distortions of the spine, some facts in proof of its efficacy have been already made known. It has been also found to effect the removal of the contractions remaining after affections of the joints—in general restoring to the patient command over the movements of the crippled limb. In a case of injury of the muscles of the shoulder consequent upon a fall on the elbow, which occurred within a few days, the continuous galvanic current restored the free use of the arm in a minute.

"That the continuous galvanic current is competent to restore, fully or in part, the patient's command over the movements of the limbs, and of the tongue in cases of apoplectic palsy, occurring in adults and in children, has been already demonstrated. Even the frightful progressive atrophy of the muscles it would appear competent to restrain—so far as a judgment can be formed from the result of a case of this kind in which it was recently employed. It has also been shown that, by the application of the continuous current, neuralgic pains, under which the patients had laboured for years, may be allayed in a minute. In cases of paralysis of the spinal cord—the so-called spinal atrophy—the continuous current will, in a few days, strengthen the limbs, and render the act of progression more secure, and, at the same time, control the attendant paralysis of the bladder."

In a subsequent communication, Dr. Remak states that, "by a long course of observations he has proved, beyond doubt, that the continuous galvanic current is capable of restoring, often within a single minute, an atrophied limb to its normal size. This result," he remarks, "has been obtained in a variety of cases, and it is one, he thinks, of vast importance in the treatment of paralysis."

It is, all must confess, one of primary importance, and, at the same time, certainly one of the most surprising of the results that Dr. R. attributes to the action of the galvanic current. How that any agent is capable, in a single minute ("*binnen einer einzigen minute*") to so excite the nutrition of an atrophied

muscle as to enable this, within that time, to restore it to its normal size ("*sein normales volumen wiederzugeben*"), is to us incomprehensible. Had it come from a less reliable source than what it does, we should have passed by the statement as one altogether unworthy of notice.

"The removal of apoplectic spinal paralysis," Dr. R. goes on to say, "is attended with more difficulty than is the removal of the affection denominated tabes dorsalis. Of fourteen cases of the latter, he has, as yet, in no instance failed in giving relief. In some the improvement occurred with surprising quickness; even in cases of ten years' continuance, the benefit has been most decided.

"Of five cases of palsy of the bladder and rectum, all have been cured—in only one case has no relief been yet obtained. In some cases of double vision and of conjunctivitis of amblyoptic eyes, of six months' duration, the disease has disappeared during the first days of the treatment.

"In local and general chorea," according to Dr. R., "the galvanic current has succeeded in quieting the irregular movements; in one case within thirty-five minutes. As to a complete cure of the disease, he is, as yet, unable to offer any positive judgment. The same is the case, also, with respect to paralysis agitans. In the majority of cases, the result has been heretofore but temporary; in a few, however, the improvement has been progressive. He has not had sufficient time to procure permanent benefit in disease of this kind. In tremors of the limbs, the effects of the galvanic current are likewise very ambiguous; they have as yet by no certain method been rendered more certain."

Dr. R., in conclusion, remarks that he believes himself warranted in affirming that the surprising curative effects of the continuous galvanic current, so far at least as refers to paralysis, etc., of the muscles, are altogether the result of its methodical action upon the central organs of the nervous system.

The communication of Dr. Remak is simply an enunciation, in general terms, of the results he has obtained from the application of the continued galvanic current in certain diseases. We regret that we are unable to present to our readers any account of the particular manner in which the galvanic current is applied by him—the length of time it is continued—or the intervals at which it is repeated. A history of the several cases would be not merely interesting, but absolutely necessary to a correct appreciation of the therapeutic use and value of the agent under consideration. We were desirous of placing before our readers the statements of Dr. R. in regard to the curative powers of the continuous galvanic current, which, however startling they may appear, would seem, from the character of the source from whence they emanate, to demand our serious consideration.

After the foregoing notice was written, we received the two communications made by Dr. R. to the French Academy of Sciences. We append the following extracts from these, as they tend to throw some additional light upon subjects which are obscurely hinted at in the German communication.

Referring to a note which he had presented to the Academy in December, 1855, in relation to the tonic contraction of the muscles produced in the human subject by means of uninterrupted galvanic currents, he remarks:—

"Since then, in pursuing my experiments, I have established beyond doubt that the tonic or permanent contractions which occur in a limb during the passage through a nervous trunk of a continued galvanic current, whether in the muscles controlled by that nerve, or in their antagonists, is of a reflex nature, and may, in consequence, be produced also by the galvanic excitation of certain cutaneous nerves. It is thus demonstrated that the continued excitation of the sensible nervous fibres, which, as we have known since the experiments of Volta, are produced by the continued action of the galvanic current, may, in the human subject, be transmitted to the nervous centres, and cause permanent contractions which are in relation with the portions of those centres thus excited."

Dr. R. then states that he was induced to try the effects of elective currents in the relaxation of muscular contractions. His first experiment was made June 13, 1856, on a female who had suffered for two years from hemiplegia,

with contractions. This experiment was in appearance satisfactory, so far as related to the power of the galvanic stream in the relaxation of muscular contraction; but he soon found that under the influence of the interrupted current the relaxed muscles were no longer under the control of the will. He therefore made a similar experiment on the 22d of June, with an uninterrupted current from one of Daniell's batteries of twenty elements.

"After having directed the galvanic current for some minutes upon the contracted muscles of the shoulder, I had the satisfaction to observe that they became more lax, and began to obey the will of the patient. In pursuing these experiments upon the same subject, with a constantly increasing beneficial result, during the space of a month, my attention was attracted by phenomena which forced upon me the conviction that the cessation of the muscular contraction was not a fact simply peripheral, but that it was the result of an excitation of the nervous centres. In consequence, my researches were directed to a therapeutic application of the galvanatonic muscular contractions which I had discovered by experiments in my own person, and I tested, in a large number of cases, the effects of the continued galvanic current in the removal of rheumatic and arthritic contractions, as well as paralytic, or those combined with cerebral hemiplegia.

"In the course of these experiments in hemiplegic subjects, I have often seen paralysis of the face, or of the tongue, even intellectual feebleness, ameliorated, although the galvanic current had been directed solely through the extremities; showing conclusively that the galvanic influence was transmitted to the nervous centres. I was, accordingly, induced to test its efficacy in the cure of partial and general chorea, and paraplegia, especially that form of spinal palsy which is known in Germany under the name of *tabes dorsalis*, and which is commonly believed to be caused by atrophy of the spinal marrow. I would not speak, as yet, of the surprising success that I have met with in the treatment of these affections, and of paralysis of the bladder and rectum, but I may say that the results of my experience are such as to lead me to the belief that, in the continued galvanic current, we have an agent capable of not only exciting the nervous centres, but of regulating and re-establishing the action of the central ganglionic cellules, by communicating to them the peripheral excitement of the nervous fibres. Accordingly, it is easy to comprehend that I have succeeded in curing neuralgia of the extremities of long continuance, and often in appeasing those tremors of the limbs which had evidently a central cause.

"There are facts even which lead to the supposition that the nervous fibres, and consequently the ganglionic cellules, may, under the influence of the continued galvanic current, return to their normal size. I have, at least, observed frequently that the atrophied muscles of a limb will augment suddenly while the current is traversing the nervous trunks, an effect that I cannot believe to be purely peripheral, because I have witnessed instances where the muscles were subject, during the passage of the current, to tremblings or violent contractions, that, according to my physiological investigations, should be regarded as reflex movements. On the other hand, it results from microscopic researches made by me during the last year or two, that the central portion of the nervous fibres discovered by me in 1837, and now recognized as the cylinder of axis of Purkinje, will become swollen in the presence of fluids, when divested of its sheath, and loses this endosmotic property some time after death, in undergoing a hardening similar to the cadaveric rigidity of the muscular fibre.

"As the number of the patients upon whom my experiments have heretofore been made has not exceeded two hundred, I will not be expected to enter into details concerning the mode of application of the continued galvanic currents for the cure of the several affections referred to in this memoir. I would merely say, that the removal by them of the rheumatic contractions, so common among the labouring classes, is an established fact, as may often be shown in a few minutes; and I am convinced that they are applicable to the amelioration or removal of the scoliotic (spinal) deviations, and the deficient development of the thoracic cavity, which occurs so often in young persons from a contraction or debility of the respiratory muscles."

The object of the second communication made by Dr. R. to the Academy, is to supply an omission in the first as to the efficacy of the continued galvanic current in the removal of rheumatic pains. "It is to be remarked," Dr. R. observes, "that the allaying of pain is an important point in the treatment of contractions, the latter being, in many cases, but the consecutive phenomena of the first."

"Among the cases," says Dr. R., "which I have had an opportunity of treating in Paris, through the kindness of MM. Cazalis, Moissenet, Follin, Brocca, Buigont, Lecorcher, and others, there was a considerable number in which a recent affection of the nerves of sensation seemed to constitute the sole cause of the trouble in the functions of the muscles, and which we were, consequently, enabled to cure in a few minutes by moderate galvanic currents. In other cases of contractions of some continuance, as in those I have had the honour of treating very recently under the eyes of the Commission of the Academy, the susceptibility of the nerves of sensation being diminished, it was necessary to employ stronger currents to remove the contractions by restoring to the nervous centres their control over the enfeebled antagonistic muscles."

The memoir of Dr. Remak was referred to a commission composed of MM. Andral, Rayer, and Velpeau, for the report of which we shall look forward with no little interest. D. F. C.

ART. XXX.—*Lectures on the Diseases of Women.* By CHARLES WEST, M. D., Fellow of the Royal College of Physicians; Examiner in Midwifery at the Royal College of Surgeons, of England; Physician-Accoucheur to St. Bartholomew's Hospital, and Physician to the Hospital for Sick Children. Part I. Diseases of the Uterus. 8vo. pp. 413. London, 1856.

THESE lectures form a valuable addition to our means of instruction in respect to a class of diseases always of importance, and which are every day becoming more and more frequent in all our larger cities, at least, if not throughout the country. Dr. West, it is true, presents us with neither novel views in regard to the leading uterine affections of which he treats, nor, in his directions for their therapeutical management, furnishes us with new plans of treatment, or remedies other than such as are already well known and generally employed. The value of his prelections consists less in any originality of doctrine or of practice set forth in them, than in the testing of the worth of generally received opinions and practices by the results of the lecturer's own clinical experience. Dr. West is pre-eminently a careful and independent observer, a clear and accurate reasoner, and a greater friend to truth than to mere authority; much more practical than hypothetical. It is this which gives to all his teachings their peculiar value, and causes us to feel when we rise from their perusal that the information we have thence derived is real and permanent.

The volume before us is restricted to a consideration of the more prominent of the strictly uterine affections; a second volume, which will treat of all the remaining diseases of the female system, is promised within three years from this time, should the health and life of the author be spared.

The first two lectures treat of the symptoms, generally, of the diseases of women, and the modes of examination. From the opening lecture we quote the following remarks of Dr. West, as well because of their truth and importance, as from our conviction that they are too much overlooked by some of our own physicians who have, in consequence, been drawn into errors of diagnosis and of treatment, by which they have not only misled themselves but others.

"Some men," says Dr. W., "regard the local ailment as everything; others almost lose sight of its existence, and it is difficult to say which of these two errors is the more mischievous. A woman applies to a practitioner who is guilty of the first mentioned error, complaining of painful and scanty menstru-

ation; he at once adopts mechanical means for her relief. He introduces bougies to widen the canal, and to remove some, perhaps imaginary, contraction of the cervix uteri, by which he conceives the escape of the menstrual fluid to be impeded, and he even incises it to make sure of enlarging its caliber. After undergoing much pain of body and much distress of mind, the patient finds herself at the end of these manipulations no better than when they began; the cause of her sufferings lay deeper, and was to have been found in the derangement of her general health, which would have attracted the notice of a better physician, and which well directed measures would probably have cured. Let me mention another case as illustrative of the opposite error. A patient seeks relief on account of profuse menstruation, attended with discharge of coagula, but accompanied with little or no pain. General treatment is adopted, the patient is confined to the recumbent posture, in a cool well-ventilated room, astringents are given internally, cold is applied locally, and no sign of disorder of the general health is allowed to pass without appropriate means for its cure; but yet amendment does not follow, for the bleeding depends upon the presence of a minute polypus, which nothing but a careful examination of the uterus could discover. In the one case a crass mechanical treatment was adopted to cure an affection which depended on the state of the general health; in the other, general treatment failed to remove symptoms which careful investigation would have shown to depend upon a local cause.

"But I need not draw upon imaginary cases in order to enforce the caution that I am desirous of impressing on you; the records either of hospital or of private practice afford illustrations of it in abundance.

"A middle-aged woman complained of frequent desire to pass water, and of discomfort in voiding it. She was dyspeptic, and out of health. Her urine was tested and found to contain albumen, and the irritable state of her bladder was assumed to be dependent on the disease of her kidneys. Treatment improved her general health, but brought no relief to her dysuria. At length, careful observation discovered the albumen to be due to the admixture of vaginal discharges with her urine, a not unfrequent source of it in women who suffer from leucorrhœa, while examination, which had been delayed too long, detected a small vascular tumour just within the orifice of the urethra, to the irritation produced by which her symptoms were due, as was shown by their immediate disappearance on its removal.

"A young lady, whose health had never been robust, began at the age of twenty-two to menstruate irregularly and scantily, and to suffer at the same time from pruritus of the vulva. For this symptom various local applications were resorted to, and more than once she underwent the distress of an examination, which discovered nothing more than an increased redness about the labia and nymphæ. At length, with the decline of her general health, she came under the care of another physician, who ascertained that sugar was present in her urine. The pruritus, like the itching of the urethra in the male subject, was the consequence and the symptom of the diabetes of which the poor girl eventually died.

"A woman was admitted into the hospital, a few years ago, in a state of extreme suffering; her countenance was very anxious, she lay in bed with her knees drawn up, dreading the slightest movement; her abdomen was intolerant even of the slightest pressure. She was reputed to have peritonitis, and had been bled for this, as well as abundantly salivated before her admission, yet without relief. But with all this her skin was perspiring and her pulse was soft and not increased in frequency. Her history was, that after vague uterine ailments for a month, she was suddenly attacked by violent pain in the womb, attended with bearing-down efforts equal in intensity to those of labour. These subsided, but the pain was referred to the bladder, and desire to pass water became very frequent. This, too, abated, and the next complaint was of violent pain in the shoulder, which was encountered by active measures for the relief of alleged inflammation of the shoulder-joint, and the pain in the shoulder suddenly ceasing, the severe abdominal suffering at once succeeded it. A hot hip-bath gave almost immediate relief, though the patient screamed when moved in order to be placed in it; and a full dose of opium was followed

by some hours of quiet sleep. The next day no pain was complained of except over the pubes, and this soon disappeared under the use of anodynes, and steel and good food completed the cure of a case of hysterical peritonitis."

The third, fourth, and fifth lectures treat of the several disturbances of menstruation—amenorrhœa, menorrhagia, and dysmenorrhœa. The entire subject is discussed with great ability. Correct views are inculcated in respect to the nature and causes of the different forms under which the disorders of menstruation present themselves, and a sound, rational plan of treatment laid down for the management of such of them as are curable by therapeutic means.

Speaking of that form of dysmenorrhœa in which the suffering is referred to the narrowness of the os and cervix uteri, and which has of late years excited much attention, Dr. W. remarks:—

"The impediment may exist either at the external os uteri, or at some limited part of the cervix, especially at the internal os, where the body and neck of the womb communicate, or it may involve the whole of its canal. It appears, in some instances, to be attributable to inflammation, and probably ulceration of the cervical canal, as in the case of a woman once under my care, the canal of whose cervix was at one point so nearly obliterated, as not to allow the passage of the finest catgut bougie, and who referred her sufferings to the effects of a labour twelve years before. In other instances the dysmenorrhœa is habitual, and the narrow cervix is a congenital condition, or one due at least to some defect of uterine development, and this latter I believe to be the more frequent form of the affection.

"An impression has of late years been gaining ground that this form of dysmenorrhœa is very common, and mechanical means of treating it have accordingly come very much in vogue, to the neglect, it is to be feared, in many instances, of those internal remedies, by which painful menstruation is in general much more appropriately treated. One circumstance, which I believe to have much contributed to the support of this opinion, is the fact that, on introducing the uterine sound, an obstacle is very often encountered at the internal os uteri to the passage of the instrument into the cavity of the womb. That this obstacle, however, is in reality perfectly natural, can be readily ascertained on the dead subject, since even after the removal of the uterus from the body, a bougie which passes with ease along the cervical canal will then encounter a resistance such as can often be overcome only by considerable effort, or, perhaps, not at all, though a smaller bougie will pass at once with perfect facility, and the uterus, when laid open, will be found to be perfectly healthy. The constriction in this situation which is found to be so considerable after death, was, doubtless, in these, and many other instances, far more considerable during life, and yet in spite of it, the history of such persons often gives no account of difficult or painful menstruation. Nor, indeed, need this surprise us, for the discharges take place during menstruation, not in a continuous stream as the urine flows from the bladder, but oozes from the interior of the womb, the blood escaping drop by drop from the os uteri. If the aperture be so small as scarcely to allow this to take place, menstruation, no doubt, may be rendered very painful, and, just as when stricture of the urethra exists, the bladder, and ureters, and kidneys become irritated and disturbed in the performance of their functions, so it is quite conceivable that a similar state of the cervix uteri may exert the same influence on the function of that organ, and render the menstrual flux scanty in quantity and morbid in character, as the consequence of the difficulty in its discharge. A slight amount of unbiased observation, however, will teach you that such a contraction of the os or cervix uteri as to impede the discharge of the menses *guttatim* is very unusual; while it will further show that in the majority of cases in which this condition really exists, the narrow cervix is only a part of the evil, that the neck of the womb is small because the organ is altogether very undeveloped."

There is great truth in the foregoing remarks; we would urge them strongly upon the attention of physicians. Mechanical explanations of the causation of a long list of ailments observed in females, have of late years become very popular with the profession, and as a necessary consequence mechanical means

have been devised for their removal. Upon close inquiry, it will be found, we suspect, that in the majority of cases these explanations are as incorrect, and the plans of treatment based upon them as unnecessary and useless as Dr. W. attempts to show is the case in reference to the supposed connection of dysmenorrhœa, with constriction of the os and cervical canal of the uterus. Mechanical dilatation of the cervix uteri should never be resorted to in cases of dysmenorrhœa on mere speculation, and with no better warrant than the fact that painful menstruation is habitual or of long standing, and that other means have not been successful in effecting its cure.

With the sixth lecture commences the consideration of the diseases affecting the tissues of the uterus, and of the several displacements of the organ.

A very excellent account is given of the acute and chronic inflammations of the womb. The history of acute uterine inflammation, which in the non-pregnant female is universally admitted to be of very rare occurrence, is preceded by a consideration of hypertrophy of the uterus, whether of the entire organ, or of its cervix only—according as it results from deficient involution after delivery or abortion, from uterine irritation, and other causes. The subject of chronic inflammation of the womb and its results is one of deep importance, inasmuch as to this source is now referred almost every disturbance of health—every pain, ailment, and disability under which the female, from puberty to the final close of her career, may happen to labour.

"Inflammation of the uterus," remarks Dr. W., "is now regarded by many writers as the most frequent of all diseases of the organ, and its consequences as so far reaching that they may persist for many years, disturbing its functions, altering its structure, and outlasting in their ill effects even the period of sexual vigour. This opinion, too, which tends to bring about a complete revolution in theory and practice concerning uterine ailments, is entertained by persons whose authority is entitled to such weight, is enforced by arguments which seem so plausible, and supported by an appeal to such large experience, that if it do not at once compel our acquiescence, at least it cannot be rejected without much consideration and careful examination."

To such an examination Dr. West has subjected it. He objects to the conclusions of those who deny the strict locality of the various uterine affections, and views them all as the result of some general constitutional disturbance, and consequently would have the treatment addressed principally to the latter, and more subordinately to the former. He considers that many considerations render it probable that the uterus, more frequently perhaps than any other organ of the body, should be the seat of certain forms of local ailment, and should, consequently, require the frequent employment of local treatment. He, nevertheless, is equally opposed to the opposite doctrine, which regards the uterine ailment as the primary and more important in almost every instance, and the constitutional disorder as nothing else than its necessary result. The influence of which doctrine "is apparent in the practice of those who are constantly on the look-out for a mechanical cause of dysmenorrhœa, and who frequently dilate or incise the cervix uteri for its cure, who trace the gravest evils to slight misplacements of the womb, and introduce instruments into its interior to remedy its mal-position; or, lastly, who discover in some very small and limited ailment of the mucous membrane of the os uteri an adequate explanation of the most varied and most distant ills, and who as sedulously adopt as their opponents studiously avoid local treatment for the cure of uterine disorders."

It is to the views of those who base the pathology of female diseases, especially those of a chronic character, almost exclusively upon ulceration of the os uteri that Dr. W. chiefly directs his examination. The general scope of this examination our readers are already familiar with, from the notice given in a former number, of his inquiry into the pathological importance of ulceration of the os uteri. His conclusion is, "that the condition of so-called ulceration or abrasion of the os uteri is far from infrequent even in cases where no uterine symptoms were complained of during life, but that it is usually unassociated with other important affections of the uterus, such as may be supposed to be the effect of inflammatory action: and further, that such affections do not seem

to be readily excited by causes acting on the neck of the womb either when displaced or when the organ is in its natural position."

It may not be uninteresting to our readers to be presented with the leading deductions which Dr. W. supposes to flow from the several classes of facts investigated by him in reference to this subject, as summed up in the lectures before us.

"1st. Uterine pain, menstrual disorder, and leucorrhœal discharges—the symptoms ordinarily attributed to ulceration of the os uteri—are met with independently of that condition almost as often as in connection with it.

"2d. These symptoms are observed in both classes of cases with a vastly preponderating frequency at the time of the greatest vigour of the sexual functions, and no cause has so great a share in their production as the different incidents connected with the active exercise of the reproductive powers. But it does not appear that ulceration of the os uteri exerts any special influence either in causing sterility or in inducing abortion.

"3d. While the symptoms are identical in character in the two classes of cases, they seem to present a slight increased degree of intensity in those cases in which ulceration of the os uteri exists.

"4th. In as far as could be ascertained by careful examination, four-fifths of the cases of either class presented appreciable changes in the condition of the uterus—such as misplacement, enlargement, and hardening of its tissue, while frequently several of those conditions co-existed. An indurated and hypertrophied state of the cervix uteri was, however, more frequent in connection with ulceration of the os uteri than independently of that condition.

"5th. The inference, however, to which the last mentioned fact would seem to lead, as to the existence of some necessary relation—such as that of cause and effect—between ulceration of the os uteri and induration of its cervix, is in great measure negatived by two circumstances. 1. That in numerous instances an indurated cervix co-existed with a healthy os uteri. 2. That while in many of the cases in which induration of the cervix existed, the ulceration of the os was very slight, induration was entirely absent in other instances where the ulceration was noticed as having been very extensive.

"Since, then, we find that a very great degree of resemblance exists between the two classes of cases, that women of the same age, in similar circumstances, present the same symptoms, leading to the same results, having the same duration, and attended with similar structural changes, whether ulceration of the os uteri is present or absent, it may fairly be inferred, that ulceration of the womb is neither a general cause of uterine disease, nor a trustworthy index of its progress, and it follows, I think, as a necessary corollary, that the endeavour by local remedies to remove this condition of the os is not the all important object in the treatment of uterine disease, which the teaching and the practice of some physicians would lead us to imagine."

Dr. West denies that uterine leucorrhœa is due mainly to a hypersecretion from the glandular apparatus of the cervix uteri; he believes it to depend upon an increased secretion from the lining membrane of the womb itself.

In lecture 9, the subject of misplacements is taken up. Prolapsus is first considered, in its various degrees, up to complete procidentia, and, in intimate connection, prolapse of the vagina also. The author's teachings on these important subjects will be read with deep interest. They are calculated to convey accurate and clear views of the nature and causes of the accidents referred to, and to lead to a correct mode of procedure in reference to their prevention and cure. The treatment of prolapsus uteri is ably discussed in the ensuing lecture. The cases requiring or not requiring mechanical support are carefully distinguished; and the uses and varieties of pessaries, and external supports and bandages pointed out.

The employment of mechanical support for the misplaced womb, is considered by Dr. W. to be neither necessary nor suitable:—

"1st. In slight cases of uterine prolapse.

"2d. In cases where the descent of the womb, still comparatively recent, is due to the persistence of the state of puerperal hypertrophy, owing to imperfect involution of the organ after abortion or labour.

"3d. In cases where uterine disease of whatever kind was the occasion of the misplacement of the organ, such disease being still in a stage calling for treatment.

"On the other hand, mechanical means of some kind or other, are generally appropriate.

"1st. In all cases of external prolapse, or procidentia of the uterus.

"2d. In cases of long standing prolapse in the second degree" (in which the uterus lies with its fundus directed backwards, its orifice forwards, so that its long axis corresponds with the axis of the pelvic outlet), "associated with much relaxation of the vagina, and consequent weakening of the uterine supports.

"3d. In all cases of extensive laceration of the perineum, and, for a similar reason, in cases of prolapsus of the aged.

"4th. In cases of the minor degrees of prolapsus which are accompanied by extreme distress or violent pain.

"5th. In all cases of considerable prolapsus of the vagina, with or without descent of the rectum or bladder, and in all cases in which the uterine prolapsus is secondary to any of those other forms of misplacement."

Versions and flexions of the uterus constitute the subject of the 11th and 12th lectures. These are rendered important subjects from the fact that, to the existence of slight versions or flexions of the uterus, occurring even in young virgins, a host of sufferings have been ascribed, and with those who look thus to slight misplacements of the organ as the chief cause of almost all the ailments incident to the female sex, the grand aim is the invention of mechanical means to remedy such misplacement. It is really surprising how almost invariably these misplacements are met with by a certain class of practitioners—it is seldom they search for them, that they do not detect them. Now Dr. W. believes that there are facts which show that the importance of uterine misplacements has probably been much overrated, a position which we have maintained again and again, much to the scandal of several of our professional friends.

The facts to which Dr. W. alludes are furnished by cases in which the removal of the misplacement, though no other uterine ailment was discoverable, has not been followed by any mitigation of the patient's sufferings, as well as by others in which the symptoms once present have ceased, in spite of the persistence of the misplacement. Two cases are detailed in evidence.

"But," remarks the lecturer, "be the value of cases such as these what it may, as proving, on the one hand, that flexions of the womb do not of necessity give rise to any suffering, and on the other, that the removal of a flexion of the organ may not be followed by the least relief to a patient's distress, the fact still remains that misplacement of the womb is in very many instances accompanied by various uterine ailments, such as were not experienced before its occurrence. The question, however, suggests itself, with reference to these cases, as to whether their history presents any peculiarity which would warrant our believing that the symptoms are due not simply to the misplacement, but to some other morbid condition with which the displacement is associated, or to the two causes together? Now, there are circumstances which appear to favour the opinion that, in the majority of instances, the symptoms are due not to misplacement alone, but to misplacement accompanied by some other morbid state of the womb."

After referring to statistics and facts bearing directly upon this question, Dr. W. remarks:—

"It seems, then, that in by far the majority of instances, the development of all the symptoms of flexion or version of the uterus coincided with the operation of some cause which increased the size of the womb, or produced congestion of the pelvic viscera; and, further, it may be added that the almost immediate relief which followed rest, local depletion, and the due regulation of the bowels, seems to show that to these associated ailments, rather than to the mere misplacement of the womb, the patient's sufferings were to be attributed. Not unfrequently, however, the relief, though striking, was of short duration, and the patient had not long followed her usual avocations, or not

long returned to her husband's bed, before many of her former symptoms returned. But this is by no means peculiar to misplacement of the womb; for we see illustrations of it in the increased suffering which, in almost every uterine ailment, attends upon the menstrual period, and in the aggravation of all previous uterine discomfort, which in many women succeeds to marriage, and which is sometimes the occasion of ailments being brought to light whose very existence was previously unsuspected."

As, however, Dr. W. believes, there can be no doubt that the mere displacement of the womb does of itself sometimes produce suffering, and occasion functional disturbance, so it must also, he thinks, be conceded that the removal of such misplacements by the sound, and the maintenance of the womb in its proper position by the uterine supporter, have been followed by the cessation of suffering and by permanent cure; and further, that these results have been obtained in some cases which had been submitted to other modes of cure without benefit.

"These advantages, however," he adds, "are in my opinion more than counterbalanced by the following evils, which, without entering upon long, and I fear useless disputes, I will simply enumerate:—

"1st. The safe employment of the instrument requires that, as a general rule, its use should be continued for only a very few hours at a time. a necessity which implies that every woman who is submitted to this mode of treatment shall undergo two vaginal examinations every day, the one for the introduction of the instrument and the other for its withdrawal.

"2d. The quietude which its use imposes, and the restrictions to which the patient is compelled to submit in order to avoid severe suffering, and the risk of serious danger, are at least as absolute in their kind, and as irksome to be borne as those which any other mode of treatment involves, while it is necessary to continue them for as long a time.

"3d. In spite of all precautions the treatment is generally painful, often dangerous, sometimes fatal; and the untoward accidents have not been by any means constantly attributable to want of prudence either on the part of the practitioner or of his patient.

"4th. Cure even by the long continued employment of this means for several months, is uncertain, while relapses are very frequent after the mechanical support is discontinued; besides which the permanent cure of the misplacement is far from being always followed by the cessation of the symptoms.

"On these accounts," adds Dr. W., "though I have tried the uterine supporter in a few cases, I have now for some time quite given up its employment, and content myself with a mode of treatment, which, though it seems to promise less, yet almost always affords great relief, which in a large number of instances quite removes the patient's sufferings, and is not unfrequently followed by the complete rectification of the position of the womb. The principle, indeed, upon which I act in the management of these cases amounts pretty much to this: that to the best of my power I take care of the general symptoms, and leave the misplacement to take care of itself."

For the details of Dr. W.'s mode of managing misplacements of the uterus, we must refer the reader to the work before us.

The fourteenth, and two succeeding lectures, are devoted to a consideration of uterine tumours and overgrowths. The connection of their occurrence with a tendency of the uterus to hypertrophy generally, is first pointed out; then the different forms of these tumours are described—overgrowths of the mucous membrane, or mucous polypi, are their simplest form; then come fibro-cellular polypi, and glandular polypi from hypertrophy of the uterine follicles. The cystic enlargement of the follicles of the cervix, or mucous cysts of the uterus are described, with an inquiry into the nature and source of the hemorrhages they occasion, and, finally, fibrinous polypus; the analogy of this to other chronic effusions of blood being pointed out, with their general characters, varying seat, and identity of microscopic structure; their influence upon the uterus, and the causes which modify it; the changes which they undergo, and nature's efforts to get rid of them; their disintegration, and calcareous transformation; the influence of age on their production; the symptoms to which they give rise—disorder of menstruation, hemorrhage, pain, sterility, and miscarriage.

In the 17th lecture Dr. W. discusses the treatment of uterine tumours and overgrowths; the precautionary measures proper to retard the growth of fibrous tumours—the management of the menstrual periods, and the palliative measures to be resorted to. He then passes in review the alleged specifics, iodine, bromine, the waters of Kreuznach; he then discusses the several surgical proceedings for their removal, points out the great hazard attending them, and the sources of danger, and concludes with directions for the proper management of cases in which these tumours occur as complications of pregnancy and labour. The management of fibrous polypi is then taken up, and the comparative merits of ligature and excision for their removal considered. The lecture closes with a notice of fatty tumours, and tubercular degeneration of the uterus.

The entire subject of uterine tumours and overgrowths of the uterus is treated of in these lectures with great ability. The author presents his views of their pathology, symptomatology, diagnosis, and treatment, with that conciseness, and, at the same time, perfect clearness, and freedom from all apparent bias arising out of any favourite hypotheses of his own, or the authority of distinguished names, that marks all his writings. No one can fail, from a careful study of the lectures devoted to the affections indicated, to acquire precise and accurate conceptions as to their nature, the accidents by which they are liable to be attended, and the most judicious plans for their treatment.

The remaining three lectures are devoted to the malignant or cancerous diseases of the uterus, and the subject in all its bearings is discussed with the same ability as are the other diseases embraced in the present portion of Dr. West's publication.

We should be gratified to see these lectures widely circulated among the physicians of this country, as well on account of their intrinsic worth, as from a conviction that the sound common sense teachings of their author, based upon personal observations, derived from many years' experience in a sufficiently extended field of practice, will have some tendency to counteract some erroneous doctrines, and inefficient if not unsafe modes of practice in respect to many uterine complaints which prevail in our midst. D. F. C.

Art. XXXI.—*Oesterreichische Zeitschrift für Practische Heilkunde—Herausgegeben vom Doctoren Collegium der Medicinischen Facultæt in Wien.* Redigirt von Joseph Johann Knolz, M. D., etc. etc. etc., und Georg Preyss, M. et C. D., etc. etc. etc. Wien, 1856.

The true value and importance of medical periodicals are appreciated by but few. They constitute a medium by which information of the onward progress of the science is promptly communicated to every member of the profession. It is through their pages alone that the physician can become apprised of the several observations, discoveries, and improvements that are constantly made in every department of the healing art—increasing and rendering more certain his knowledge of the character of the diseases he is daily called upon to treat, increasing the means at his disposal for their removal, or simplifying, and rendering more efficient the application of those remedial measures with which he is already familiar.

Another advantage of periodicals, and one of no small moment, is that through their pages contributions to the general fund of medical knowledge are communicated without delay to the entire profession, so that their value can be fully tested, and such as are approved appropriated at once, without the necessity of waiting until some one competent to the task shall be prepared to collect, compare, sift, and arrange them according to the particular subject to which they relate, and thus present them to the profession embodied in a monographic form. Were it, in fact, not for the facilities afforded by our periodicals, many an important fact, observation, and suggestion, would be lost to the profession at large. The pages of our medical journals serve as a storehouse of materials, contributed by a hundred hands, for the improvement of the science and the art of medicine in all its various departments.

The perusal of medical journals, even the best conducted of them, cannot, it is true, compensate for a neglect of those standard works, whether monographic or systematic, for which we are indebted to the master-spirits of our profession; it is in conjunction with a careful study of these that the former become chiefly valuable. From the one is to be acquired a knowledge of the generally received doctrines and practical precepts of medicine systematically arranged; by the other we are informed of the modifications and improvements these are gradually undergoing, as new facts are developed, and more accurate and extended observations are made.

We cannot conceive how any one can feel himself competent to discharge his duties as a physician who never opens the pages of a medical journal. The shelves of his library may be amply supplied with the best and latest productions of the best minds in the profession, to the study of which he may devote every hour he can spare from the bedside of his patients; and yet, in his acquaintance with the actual medical knowledge of the day he will find himself on many points inferior to him, who though, perhaps, less conversant with the writings of the standard authorities of the profession, is an attentive reader of the current medical journals, and is, at the same time, competent to profit by the information thence derived.

Our own country is amply supplied with medical periodicals, several of them of a very high character, and in their copious and well arranged summaries of the facts and observations contributed by contemporary writers, scarcely surpassed. But for copiousness and variety in professional journalizing we must go to Germany. There we shall find not only those devoted to the medical sciences generally, but others restricted to some one branch of medicine, or even to particular classes of disease, as those of the eye, of women, of children, etc. etc., published weekly, monthly, half-yearly, or yearly.

These journals differ not a little in value; in many of them are to be met with communications, presenting the results of deep research and careful and extended observations, from the highest dignitaries and most reliable authorities of almost every country in which the German language is spoken.

Among the weekly medical journals of Continental Europe, the *Austrian Journal of Practical Medicine*, thirteen numbers of which now lie before us, holds a very respectable rank. It is published, every Friday, in Vienna, by the College of the Medical Faculty of that city, under the immediate editorship of two of their body, Drs. Knolz and Preyss.

It is a goodly quarto, each number containing eight pages, well printed, in the Roman character, and upon excellent paper. At the close of each quarter the thirteen preceding numbers are stitched together in a cover, with a general table of contents, to supply such as prefer the journal in this form.

Its contents are arranged in five departments: 1st. Original communications in the different departments of medicine. 2d. Practical contributions in respect to legal medicine, and medical police. 3. Proceedings of the Faculty. 4th. Selections from and notices of new books. 5th. Personal notices, appointments, deaths, etc., of physicians.

The first of the original papers in the numbers before us, is on the characters and qualifications of the nurses and attendants in the large hospitals, and the best means of securing such as are faithful and competent. The remarks of the writer are, in general, sound and practical. We entirely coincide with him in the truth of the position with which he sets out, namely, that to form good nurses they must be properly instructed in their duties and the manner of fulfilling them, respect being had, at the same time, to the *morale* of the individuals to be instructed; that in disposition, manners, and habits, as well as all their other qualifications, they should be competent "to take proper care of the sick." This communication is from the pen of Professor Helm, of Vienna.

In the next number, Professor Schuh relates two interesting surgical cases; the first, of a lad, 14 years of age, in which the professor performed the operation for lithotomy according to the plan of Celsus. The boy suffered also from a stricture of the urethra at the beginning of its membranous portion, preventing the passage of any instrument save the smallest bougie. Dr. S. decided, by one and the same operation, to divide the stricture and open the bladder, and

adopted as the one best calculated to effect this double purpose, the operation of Celsus. This was, accordingly, successfully performed.

"During the after-treatment, I observed the rare occurrence of the wound becoming incrusted with urinary concretions, so that I had frequently masses of the size of a pea to remove by means of an ear-scoop, while the entire circumference of the wound was irritated by the contact of the urine. The application of pledgets of charpie wet with vinegar was productive of some good. The vinegar, however, only dissolved the earthy phosphate; to facilitate the solution of the urate of ammonia, warm water or ammonia were found serviceable. The nitric acid was given inwardly. The incrustation and irritation disappeared entirely as the wound contracted in size, and became, at its prostatic end, so far reduced as to retain *in situ* a catheter. This being left open during the day, allowed the urine, as the patient lay upon his side, constantly to dribble through it. For a long time a fistulous opening remained in the perineum, which, finally, after a single application of the actual cautery, was removed. After a residence of six months in the hospital the patient was discharged entirely cured."

The second case was in an officer, 54 years old, who had an impassable stricture of the urethra, with numerous fistulous openings through which the urine escaped. The urethra was laid open through its strictured as well as its fistulous portions, from without, a large silver catheter was introduced, and a perfect cure effected. The details of the operation in this case are highly interesting, and the result, considering the nature and extent of the diseased condition of the parts that were found to exist, of a most pleasing character.

Dr. S. states that he had before met with similar cases in which a like operation was equally successful.

A short communication is contained in the ensuing number, from Professor Sigmund, of Vienna, in which are very briefly discussed the questions, Who are the patients and what are the diseases to whom and in which a journey to the South is to be recommended? What particular places in the South are to be made choice of in each case? And what are the precautions to be observed by the patient in respect to the journey, and during his residence in the South, in order that he may derive from them permanent benefit?

These are important questions, the full examination of which would fill the pages of a sizeable volume. In the paper of Dr. S., all that he has to say in respect to them—which, nevertheless, as far as his remarks extend, is marked by much good sense—is comprised in less than two pages of the journal before us. The subject of change of climate, as well as of simple travel, without reference to what is usually understood by a change of climate, as a hygienic or curative measure, is one demanding a thorough study on the part of every practitioner. There are few, we suspect, of those in reference to which the advice of the physician is required, upon which greater and more serious mistakes are daily committed.

In this same number, Prof. Schuh reports the history of a case of extirpation of an hydropic ovary, in an unmarried female, 21 years old. The patient, three days after the operation, died of peritoneal inflammation.

"The fatal termination in this case," Dr. S. remarks, "is evidently to be attributed entirely to the unusually firm and extensive adhesions of the diseased ovary. This, as well as other cases that have been observed, shows that the absence of adhesions can never be certainly determined before the operation, unless when the tumour is small, and exhibits such a degree of mobility that we can feel it to fall from one side of the body to the other. When, however, the tumour has become large, and existed for two years, extensive adhesions may have taken place, notwithstanding that not the slightest indication of inflammation or of pain had been experienced. All of the indications given by the English writers, as those showing the absence of adhesions, are incorrect."

In the fourth number, Dr. Lumpe, of Vienna, commences a series of remarks on the diseases of females, and their treatment, which is continued in the subsequent number. These remarks are sufficiently interesting, but present no especial points for our notice on the present occasion.

The paper of Dr. L. is followed by meteorological observations, and an ac-

count of the prevailing character of the diseases observed in Vienna, during the months of November and December, 1855, communicated by Dr. Flechner.

The sixth number presents the commencement of a somewhat elaborate paper on the hygienic treatment of tuberculosis, by Dr. Polansky, of Rosnau, which is continued in the ensuing two numbers, and is not yet concluded. In the published portion of the paper, the subject is considered under the heads of temperature, air, and food, in relation to each of which the author has offered some very admirable suggestions. In the correctness of all his teachings we cannot, it is true, coincide. The causes, nature, prophylaxis, and treatment of tuberculosis, and what have been denominated tuberculous diseases, are as yet, we are convinced, but little understood; and in some of their particulars, at least, the plans that have been proposed as preventive or curative, whether hygienic or therapeutic, are founded on grave pathological errors, or upon partial or inaccurate observations. Taken as a whole, the paper of Dr. P. will be found interesting and instructive. The grand principle to be kept in view, in the hygienic management of tuberculosis, is to place the patient permanently upon such a diet and regimen as will promote a healthy performance of digestion, hæmatosis, and nutrition, and in all cases in which tuberculation is known to exist, or is suspected, to guard with sedulous care the patients from every cause capable of inducing congestion or inflammation in the affected organs.

In the eighth number is an essay, by Dr. Heider, on the absorption of the roots of sound permanent teeth.

"The cause of the absorption of the roots of the deciduous teeth at the period of the second dentition has been the subject of many observations and numerous hypotheses. All that we as yet know, with certainty, in respect to it, is, that there exists an intimate connection between the development of the permanent teeth and the absorption of the roots of the deciduous teeth. In what, however, this connection actually consists, is not yet clearly explained. This much, however, is certain, that, at the period of the development of the permanent teeth, their enveloping sacculi become more vascular, and come in immediate contact with the roots of the deciduous teeth, and consequently play a very important part in the absorption of the latter—nay, in all probability, are the sole agents in effecting it. A renewed examination of the surface of the deciduous teeth at which absorption takes place, shows that this is always on the side that is inclined towards the advancing tooth; and that when not merely the compensatory tooth, but its neighbour, comes in contact with the same deciduous tooth, two perfectly distinct surfaces of absorption, corresponding to the points of contact of the new teeth, are presented by the former, showing that both the advancing teeth in contact with it had contributed to the absorption of its root. Another fact places the correctness of this explanation of the means by which the absorption of the deciduous tooth is effected beyond doubt. When the permanent tooth is not developed, or its development takes place in a wrong situation, the corresponding deciduous tooth is not shed, but keeps its place in the jaw in after life. This is often found to be the case with respect to what are known popularly as the eye-teeth. The deciduous teeth are consequently shed, one after the other, just in the order in which, by the development of the corresponding permanent teeth, their roots are absorbed by the latter.

"The foregoing facts have been known to dentists for some time, but much less familiar are they with the fact that the root of a sound permanent tooth may be absorbed in the same manner as the root of one of the deciduous teeth, by the abnormal development beneath it of another permanent tooth.

"In my collection I have six permanent teeth, the roots of which have been in this manner entirely or partly absorbed. Five were extracted by myself, and the persons from whose mouths they were taken remained under my observation; for one I am indebted to my esteemed colleague, N. Terzer. These teeth are divisible into two groups: the one, where the posterior root of the second inferior molar tooth was absorbed in consequence of the expansion of the crown of the adjoining wisdom-tooth; the other, in which the root of the outer incisor was absorbed by the intruding crown of the so-called eye-tooth. In all, the surfaces at which absorption has taken place present precisely the same appearance as those of the deciduous teeth, when these have been cast at the usual period. Especially is this observable in the second inferior molar

teeth. In one we have the commencement of the absorption process, in a concave semicircular depression on that part of the root which was in contact with one of the projections on the obliquely situated crown of the adjoining wisdom-tooth; in another case, one half, and in a third, the entire root is removed by the development beneath it of the dens sapientia. In all these cases, the extraction of the affected tooth was rendered necessary by the intense pain suffered by the patients, connected in one with inflammation of the periosteum of the root, and in the two others with exposure of the nerve.

"Equally characteristic is the surface at which absorption had occurred in the incisors. In one there is an oval depression on the posterior surface of the root, near the neck; and in the other two the root is entirely removed, and one of them exhibits a cavity corresponding to the point of the encroaching eye-tooth. The removal of the affected tooth, which in one case was already very loose, became necessary, in order to give room for the development of the approaching eye-teeth.

"These observations show, conclusively, that the process by which, at the period of the second dentition, the roots of the deciduous teeth are removed, is neither specific nor restricted to the first set of teeth, but that it may be called into action in the case of the permanent teeth, and cause the removal of their roots also, and that it is dependent partly upon the structure of the dental tissue, and partly upon the increased vascularity of the outer portion of the sacculi of the approaching teeth. The process has great similarity to that which occasions the absorption of the bones in consequence of the development of tumours in contact with them, and the two are probably identical."

The tenth number contains a sensible paper on eye-glasses as optometers, by Dr. Jaeger, Jun. Many judicious hints in respect to the proper selection of eye-glasses generally, so as to adapt them to the power and peculiarity of vision in each individual who demands their aid, may be derived from the observations of Dr. Jaeger. The paper is too long for us to translate entire, and we should fear doing injustice to its author by a meagre abstract of it.

An account of the intermitting fever endemic of Moldau, by Dr. Schnabner, is one of the original articles for number eleven. We find in the history of this disease, as given by Dr. S., nothing calculated to throw any new light upon its etiology, nature, or treatment.

The same remark will also apply to the account of the epidemic cholera as it occurred in Warasdiner Comitate during the year 1855, by Dr. Mlinaric.

A very interesting history is given of a case of ruptured uterus, in which the Cæsarian operation was performed by Dr. Podbersy, of Marchegg, with a favourable result as regards the mother. The rupture occurred in the seventh pregnancy. The first two had terminated in abortion; in three, the child was delivered by instruments; and in one, she was delivered of a healthy female child after a natural labour.

Dr. W. Linhart presents, in the twelfth number, some remarks on the symptomatology of fractures of the body of the clavicle. The leading object of Dr. L., in these remarks, is to show that the depression of the shoulder on the same side with the fracture, affords no certain indication of the occurrence of the latter. The following are his general conclusions:—

"1. That the shoulder is not retained *in situ* either by the clavicle nor by the muscles alone, but also by the bloodvessels and nerves, but especially by means of ligaments and fascia.

"2. That the depression of the shoulder affords no certain indication of a fracture of the body of the clavicle, and that, when it does occur, it is dependent, not simply upon the solution of continuity in the collar-bone, but upon the rupture of the soft parts, to the extent of which it is always in proportion.

"3. That the fractured extremity of the inner fragment is always thrown upwards—the more so, as the fascia coraco-clavicularis is separated to a greater extent from the bone, and, in this case, the fractured end of the inner fragment is also directed backwards towards the supra-clavicular region.

"4. That the greater part of the displacement, in cases of fractured clavicle, is to be attributed to the elevation of the inner fragment, and not to the depression of the shoulder."

Next follow observations on Ischl's Hospital, by Dr. J. Brenner. This hospi-

tal appears to be an establishment for the cure of various chronic diseases by bathing, the internal use of mineral waters, a regulated diet, pure air, &c.

"The remedies here prescribed," says Dr. B., "are the sea-water bath, the salt vapour bath, baths made from the mud of the fens and salt mountain, and milk baths, and, inwardly, the milk of sheep, goats, and cows, fresh or sour, the water of the Maria Louisa's salt spring, of the saline sulphur spring, and the other natural mineral waters of the locality. Among the sanative measures to which the patients are subjected, are to be included the pure balsamic mountain air, mountain exercise, the residence amidst fragrant forests, and excursions into the beautiful neighbouring valley with all its romantic scenery."

Connected with the institution is a swimming school and gymnasium.

The paper before us merely presents some very general remarks on the nature of the diseases to which the several kinds of baths and mineral waters in use in the institution are adapted.

Ischl's establishment is one certainly of a highly interesting character. The nature of the peculiar remedial agents there brought into requisition, and systematically applied, according to the condition of the patients, and the nature and stage of the diseases to be removed, under the direction of skilful and experienced practitioners, caused us to feel no little disappointment when, on reading the paper of Dr. B., we found that it gave no account of the results of the treatment upon the patients actually subjected to it.

In the thirteenth number, Dr. Mojsisovics presents some practical notices on the curative powers of the thermal mineral springs of Gastein in the Noric Alps.

We shall close this notice of the journal before us, by translating entire from the medico-legal department of the fourth number, a paper on poisoning from eating unwholesome sausage meat.

"It was towards the end of the eighteenth century that the attention of physicians appears to have been first directed to the peculiar pathological symptoms resulting from a poisoning of an acute or chronic character, induced by the eating of sausages and other kinds of stale animal food. The poisonous effects have been especially observed after eating such kinds of animal substances which, to all appearance, had undergone but little change, or which, at least, had no stronger or more unpleasant smell, or discoloration, or other more decided indications of decomposition than what is termed ripe game, which is so often and freely partaken of without any bad effects resulting.

"It is a curious circumstance, that, as appears to have been invariably the case, the peculiar poisonous effects should result only from the eating of animal substances that have been subjected to a more or less prolonged cooking, and hence blood and liver puddings, especially those that have been smoked, have been found very often to produce a poisonous effect on such as partake of them.

"Although the particular change in the food upon which the development of its poisonous properties is produced is not fully understood, it has been attempted to be explained hypothetically. Thus Kerner supposed that a peculiar acid, developed by the fatty matter of the food, was the poisonous agent, but Buchner subsequently showed that the only acid found in poisonous sausages is the innocuous acetic, and that the poisonous substance upon which their noxious qualities depend, named by him pyroadeptic ether, was more similar to the etherial oils than to an acid. Since then, it has been found to be analogous to the volatile fatty oils.

"The greatest number of instances of sausage poisoning have been observed at Wurtemberg. But the most remarkable instance on record is that which occurred at Andelfingen, in the Swiss, January 10, 1839, when, of six hundred persons congregated on the occasion of a musical festival, who had dined together in one tent, 444 were taken sick, and nine died. Of those who escaped, some had eaten none of the unwholesome food; others but a very small quantity, which was almost immediately rejected by vomiting. It is worthy of remark, that the typhoid form of disease produced, on this occasion, by eating of the poisonous viands, subsequently assumed a contagious character.

In the *Med. Correspondenzblatt* of the Association of Wurtemberg Physicians, vol. xxviii., Nos. 41 and 42, Dr. Berg, chief physician to the poor in Langenberg, gives a detailed history of poisonous effects resulting from eating unwholesome sausages, that occurred in the kingdom of Wurtemberg, April, 1855,

and which, in three cases, terminated fatally. He states that J. G. M., a peasant, of Oberstetten, made a number of blood and liver puddings out of the lungs and liver and two pitchers of the blood of an ox, purchased the preceding day, and the similar parts of a hog that had been killed on the 7th of April, and with a portion of the same material of which these were composed, he filled the stomach of the hog. These things were all completed on the same day, and hung up in the chimney to be smoked, from whence they were taken as they were wanted for the use of the family. On the 19th of April, the last of the liver puddings were eaten, with potatoes, by five grown persons and three children. Each of the former ate half a pudding, except the peasant M., who ate a whole one at dinner, and in the afternoon and at night another. The same persons partook, at noon on the following day, of sourcrout, peas, and of the sausage mixture with which the hog's stomach was filled, notwithstanding all the members of the family had been sick the preceding day. Of these, three died.

"1. A shepherd, aged 28 years, robust, and otherwise in good health. He had complained, as early as the 17th of April, of lassitude and cutting pains in the stomach. On the evening of the 19th, he experienced intense thirst, pains in the stomach, and loss of appetite. The next morning, whilst in the field, he was attacked with severe pain of the stomach, and frequent vomiting; he, nevertheless, at noon, ate of sourcrout and peas, and a small portion of the hog's stomach and its contents. In the afternoon, vomiting again occurred. For two days he had passed nothing from his bowels, and but little urine. In the evening he was forced to take to his bed. On the 22d, Dr. Wolfshofer was called to him. He discovered paralysis of the eyelids, vertigo, slightly coated tongue, hoarseness of voice, intense thirst, and great exhaustion. An emetic of eight grains of sulphate of zinc was administered, but did not operate. In the afternoon, in addition to the foregoing symptoms, there were great anxiety and dyspnœa, the voice became constantly more hoarse, and, during the last three hours of his life, the power of speech was entirely lost. His intellect remained, however, undisturbed, and he wrote upon a slate his wants. The difficulty of breathing disappeared a short time before death, which occurred on the evening of April 22.

"2. The wife of the peasant, 36 years old, in good health previously, complained on the 16th of April, of lassitude, and occasional pains in the stomach. On the afternoon of the 19th, whilst at work in the vineyard, she experienced great thirst, and, on her way home in the evening, she was attacked with vomiting, as, also, in the forenoon of the next day, in the vineyard. At noon, as on the 19th, she ate beans and salted and smoked pork. In defiance of her extreme lassitude, she continued at work in the vineyard. On the evening of the 21st she was obliged, however, to take to her bed. Dr. W. saw her on the morning of the 21st. He found her labouring under paralysis of the eyelids, dilated pupils, some hoarseness of voice, and great thirst. The mucous membrane of the fauces was reddened, there was difficulty of swallowing, and a constrictive pain in the region of the œsophagus, directly over the sternum. There was some tumefaction of the stomach, which was sensible to pressure. The bowels had been constipated for three days; the urinary secretion was suppressed; the pulse frequent and weak. A dose of castor oil was given, which produced on the next morning coloured stools, and a discharge of urine. The other symptoms were increased, the eyelids could no longer be unclosed, the iris was insensible, the voice scarcely audible, the dysphagia was extreme, the pulse was weak but not frequent, the skin of the extremities was cool. The patient complained of a sense of anxiety. The respiratory murmur was feeble, and here and there mucous râles were heard. The patient expired during the night of the 23d. A short time before her death the difficulty of respiration had disappeared.

"3d. A servant girl, 28 years old, of previous robust health, after partaking of half a liver pudding, on the afternoon of the 19th of April, experienced, whilst working in the vineyard, intense thirst, in consequence of which she drank very copiously of water; she was without appetite, and had pains in the abdomen, but neither vomiting nor diarrhœa. On the following day, whilst in the vineyard, she vomited once. On the 21st, after partaking of sour beans, she was

attacked with repeated vomiting and abdominal pains. Towards evening she was forced to lie down. There had been no evacuation from the bowels or bladder for four days. Pain of the stomach upon pressure. A dose of castor oil was followed by a stool and discharge of urine. On the 22d there occurred repeated vomiting of a yellow fluid, and portions of the peas and beans the patient had eaten. The patient now experienced vertigo, her face became deeply flushed, her pupils were dilated, but without paralysis of the eyelids, the tongue was dry and somewhat coated, there was slight redness of the fauces, and dysphagia without pain. The abdomen was soft, sensible, and tumid. The pulse tolerably full and contracted. On the 25th, a large dose of calomel was administered, and brought away greenish stools, mixed with blood and slime, and attended with some degree of straining. Partial paralysis of the eyelids now set in, with dilatation and immobility of the pupils, contraction of the features, a dry hoarse voice, dysphagia, cold extremities, anxiety, and dyspnœa, and the patient expired on the 27th.

"The post-mortem examination, in the cases just detailed, showed the following as the most constant and striking pathological phenomena. Corrugation of the skin, with dryness, and an empty condition of its bloodvessels, and those of the subcutaneous cellular tissue. Congestion of the vessels of the mucous membrane of the air-passages and lungs. Hyperæmia of the mucous coat of the intestines, often with ecchymostic effusions. Congestion of the vessels of the kidneys and urinary bladder.

"The course of the disease in the five remaining members of the peasant's family, and in four other individuals not belonging to it, who had eaten of the same blood puddings, was more favourable, and in all terminated without destroying the lives of the patients. In none of these did vomiting occur, but all the leading symptoms observed in the fatal cases were present, to, however, a less intense degree.

"All of the affected individuals had partaken of blood pudding, but the members of the peasant's, of only liver pudding; all were affected with similar symptoms, with, however, various shades of difference. The poisonous property, therefore, had become developed as well in the blood as in the liver puddings, though it would appear that in the latter it was to the greatest extent, inasmuch as in all those persons who had partaken of these severe disease occurred, while in none of those who had eaten only of the blood puddings, did any dangerous symptoms present themselves.

"The puddings are stated to have had a sour taste, and to have become much softer than they were at first.

"The symptoms observed in the cases, the history of which has been detailed, differ in nothing from those previously recorded as having resulted from sausage poisoning. They may be arranged in two groups, those of reaction and those of paralysis. To the first group appertain the abdominal pains, nausea, vomiting, diarrhœa, increased sensibility of the abdomen upon pressure, the hard, full pulse, flushed face, aversion from light. To the second group belong the vertigo, double vision, diminished power of sight, the paralysis, hoarseness of voice running into aphonia, dysphagia amounting sometimes to a total inability to swallow, costiveness, suppression of urinary secretion, cold extremities, and feeble pulse.

"The same interval was observed in all the cases between the consumption of the unwholesome articles and the development of their poisonous effects.

"From the degree of the reaction which occurs in different instances, no conclusions can be drawn as to the severity and danger of the second stage. In the early stage, the symptoms were the same in the cases which terminated fatally as in those of a milder character. It is worthy of especial remark, however, that all the patients who at first suffered from pains in the abdomen and diarrhœa recovered, while in the three patients who died, the cutting pains in the bowels and the vomiting were unattended throughout with diarrhœa.

"An examination of the remaining portions of the poisonous articles showed that some of them had become very soft, and exhaled a decidedly sourish and unpleasant smell. This change was not as evident in some portions as in others, which is an additional explanation of the reason why that all who partook of them were not equally affected." D. F. C.

QUARTERLY SUMMARY

OF THE

IMPROVEMENTS AND DISCOVERIES

IN THE

MEDICAL SCIENCES.

ANATOMY AND PHYSIOLOGY.

1. *Researches on the Cause of the Fluidity of the Blood.*—Dr. B. W. Richardson, in a paper read before the Chemical Section of the British Association for the Advancement of Science, commenced by giving a historical sketch of the various hypotheses which had been formed to account for the fluidity of the blood and the phenomena of coagulation. He then related his own investigations, which had led him to the discovery that ammonia is a constituent of the blood, and that on its presence the solubility of fibrin, and therefore the fluidity of the blood, is dependent. The numerous experiments performed by the author were described: they may be thus briefly classified: 1. By causing the vapour arising from coagulating blood to pass through another quantity of blood, drawn as nearly as possible at the same time and from the same animal, the coagulation of the latter is suspended so long as the current of vapour is kept up. 2. By driving the vapour of coagulating blood into pure hydrochloric acid, and afterwards treating with chloride of platinum, the characteristic yellow crystals of ammonio-chloride of platinum are procurable. 3. On collecting a large quantity of freshly drawn blood in a wide-mouthed jar, and placing over it a cover, to the interior of which is fixed a slip of glass moistened with hydrochloric acid, the glass becomes covered with microscopic crystals of chloride of ammonium. 4. If fibrin removed from blood be carefully dissolved in a weak solution of ammonia, and again added to the serum and red particles, coagulation may be induced. The result arrived at was, that the phenomenon of coagulation depends essentially on the evolution of ammonia from the blood: and this gives an explanation of the modifications observed in the process of coagulation under various physical conditions. In concluding his paper, Dr. Richardson pointed out that ammonia, in combination with carbonic acid gas, is a constant constituent of the air expired in the breath. The presence of ammonia in the animal economy, and its evolution in respiration, was of interest in that it connected more closely the link that exists between the animal and vegetable worlds. But the subject was of the greatest importance in relation to the causes, the nature, and the treatment of various diseases.—*Proceedings of British Assoc. for Advancement of Science*, 1856.

2. *Contractility of Tendons.*—M. Jules Guerin read, on the 3d of March last, an interesting memoir on this subject before the Academy of Sciences, which is published in the *Gazette Médicale de Paris*, March 8, 1856. In this memoir, the author questions the accuracy of the doctrine taught by Bichat and subsequent anatomists, that the tendons are merely passive instruments for the transmission of motion—that they are inert cords, and have no contractility. For ten years he has entertained the conviction that tendons possessed contrac-

tility, although of a different character from that inherent in muscular structure. He thus sums up the results of his observations:—

1. *Histological Facts.*—M. Guérin long since demonstrated that, under certain determinate conditions, such as constant and excessive tension, a muscle may pass into the fibrous state, resembling, in every histological particular, its tendon, of which it now forms but a mere prolongation. Able microscopists have repeatedly found themselves quite unable to distinguish between the two. From this identity of structure he was led to infer identity of function. Moreover, he, as well as other surgeons, had observed that muscles, evidently in a fibrous state prior to an operation, the result of which was the restoration of their normal length and tension, frequently, in the course of years, or even of months, regain their fleshy condition.

2. *Pathological facts* enable us to establish directly the conclusions proceeding from the above induction. In 1840, M. Guérin first proved that tendons are susceptible of a special retraction, independently of the muscle properly so called—that is to say, that they may become and remain shortened, as a consequence of a kind of spasm limited to their sphere of action. This, besides being met with in various lesions implicating only the tendons (as in certain burns, abscesses, etc.), is of frequent occurrence, and easy to recognize in rheumatic and scrofulous affections of the joints. The anatomical character of tendinous retraction, distinguishing it from the retraction of the muscle properly so called, is the diminution of the length of the tendon in relation to the muscle, which preserves its normal length. The contrary takes place when the muscular fibre primarily participates in the retraction, or is its principal seat. The retraction originates in a lesion and pain localized near the insertion of the tendon, as in certain arthralgias, under the influence of which an attitude of the joint is assumed in relation to the action of the shortened tendons, without participation of the muscles properly so called. Such attitude has been supposed to be assumed voluntarily, in order to obtain relief from pain; but an inspection of the special directions imparted to the parts, shows that these much oftener relate to the isolated action of this or that tendon, than to the collective action of the muscles that move the joint. This retraction, as in the case of that of muscles, is but the pathological expression of a physiological property possessed by the tendons.

3. *Physiological Facts.*—The tendon of the patella is separable into two distinct portions, just as if they were separate tendons, which may be termed *infra*-patellar and *supra*-patellar tendons. It happens not unfrequently, as a consequence of disease, that the patella becomes anchylosed, or fixed to the femur, isolating from the muscular extremity of the tendon, the contraction proper to the latter. On observing what takes place in such persons, during efforts to raise the limb, we find that, at the same time, the extensor muscles of the thigh contract, the infra-patellar tendon—*i. e.*, the portion situated between the immovable patella and the tibia participates in this contraction, becoming sensibly hardened and shortened both to the touch and sight. We may, indeed, observe upon ourselves the contractions of this infra-patellar tendon during certain attitudes. If, while in the sitting posture, we place our fingers along its track, we find it become distended and hardened during every effort made to raise the leg, still keeping it at the same degree of flexion, the patella remaining immovable and strongly applied against the femur.

4. *Nature of the Contractility.*—The contractility of tendons is not identical with that of muscles, for it cannot be induced by galvanism. There are, too, other contractile organs, not excitable by galvanism, such as the *dartos*. The muscles themselves present sometimes an exceptional state; for, after saturnine paralysis, they continue to contract under the influence of the will, but are completely insensible to the influence of galvanism. By means of two experiments, M. Guérin endeavours to point out the limits of both muscular and tendinous contraction; and he considers that the latter comes into operation when the weight of the body to be moved induces resistance. Hence he terms this tendinous contractility the *contraction de résistance*, indicating thus its true experimental character, and its difference from voluntary contraction.

In another memoir soon to appear, M. G. promises to point out the physiolo-

gical consequences, and the pathological applications, which result from the facts announced in the present memoir.

3. *Anatomy of the Kidney.*—Busch, in a late paper (*Virchow's Archiv.*, 1855), after alluding to the investigations of Goodsir and Müller regarding the formation of secretion in cells, which burst and allow its outflow, he specially mentions the discovery by Müller, of the formation of secretion vesicles containing clear fluid and uric acid salts in the interior of the cells, which grow and occupy the whole cell eventually, and finally the granules of salts are liberated into the excretory ducts. The snail is particularly referred to. Müller concluded that only the secretion vesicles were excluded, and new ones formed by the cells. The author had observed granules of uric acid salts also between the secretion vesicle and the cell wall, and some cells also with these granules and no secretion vesicles. Hence the latter are not necessary for the filling of the cells with urinary precipitates. In almost all cases, the first amorphous granular urinary material forms before the vesicle, whose walls are formed out of the cell-contents round the partially precipitated urine. The author enters at length into the discussion regarding the chemical character of the urinary deposit, whether it be a simple acid, or a salt, and what salt; and also regarding the proof that the urine is not brought to the kidneys as a salt, and soluble, but that the cells of the gland produce it by a chemical process out of the material brought to them. He goes on to speak of the different views of the relation between the Malpighian bodies and the urinary tubes, and determines, by his observations on snakes, that they are decidedly inclosed in a capsule, being the enlarged termination of the urinary canals. The snake has the Malpighian body quite at the termination, whilst the triton only has it in a wider part of the canal; and in the snake ciliated epithelium exists at the margin, uniting the body to the tube just as Bowman described in the frog. The chief part of the wall of the capsule is lined by a polygonal epithelium, and on the free surface of the knot of vessels inside the capsule a distinct epithelium may be seen in fortunate cases, which in the embryo of the cellular matrix may occasionally be witnessed crossing bridge-like from one convolution of the vessels to another; but no connective tissue was visible between the cells and the vessels. The vessels seem to pierce the capsule, carrying a layer of epithelium before them. In general, the Malpighian vessels in the lower animals are merely windings of the same vessel, but in some, as in the viper, divisions and ramifications of the vessel existed. At least in the kidneys of snakes the ciliated epithelium is seen entering low down the tubes, provided that water is not used in the preparation. Each cell is seen, when the movement becomes slow, to have only one cilium, which moves about like a whip-lash. Ciliary movement could not be seen in the kidneys of birds.—*B. and F. Med. Chirurg. Rev.*, Oct., 1856, from *Virchow's Archiv.*, No. 5, 1855.

4. *Development of Joints.*—Luschka from observation having determined that the pubic articulation was the lowest step in the formation of an articulation, conjectures that it might possibly represent a certain stage of development in other joints. Having found in the human and other fœtus, that a fibrous substance enveloped the articulating cartilage, and moreover that, in the cartilage of the pubic joints, such a material was spread over its hyaline foundation (*grund-masse*), and afterwards that variously formed small microscopical projections were formed which, along with their substratum, passed into a fluid synovium; and that, finally, a cavity bounded by smooth cartilage was produced, he thought that this might be the ordinary process in the formation of all joints. He took for examination the union between the second and the seventh and intervening ribs with the sternum, and also that between the manubrium and the body of the sternum. In the above-mentioned cases, the union in early life is often by a species of continuity, and effected by means of a fibrous substance instead of by a proper articulation, which becomes lost in the cartilage-mass covering the costal sinus in the edge of the sternum. When a very small cavity exists, the cartilage of the rib and the sternum is covered with an extensive fibrillation, and exhibits on the surface turned towards the cavity, a very un-

even appearance, owing to the projection of the fibre bundles undergoing destruction, the whole of the elements in the neighbourhood of the cavity indicating a gradual and progressive process of dissolution. The substance covering the cartilage is not thoroughly dissolved, as a rule, in the development of the sterno-costal joints, since in grown-up people, almost universally, at the rib-cartilage exists a layer, at one time homogeneous, at another time more striped, from which variously formed leaf-like or branched projections are wont to grow into the cavity. That which, between the ends of the second and seventh, and included cartilages, and the sternum, exists as an exception—namely, the continuity by means of a fibrous substance—exists as a rule in the union between the body and the manubrium of the sternum. Here the union—unless it be, as it often is after the age of forty, bony—consists, almost without exception, of a fibrous substance which joins both the discs, consisting of pure cartilage. The fibrillation proceeds from the mass of the disks, without any line of demarcation, and contains, besides a number of cartilage cells, a very large amount of firm elastic fibre. The fibrous mass generally, in the instance of the second rib, is united with the angle dividing the cartilage into two facettes. Only in very rare cases is there any cavity between the manubrium and the body of the sternum. One case (a child aged two years, and also two adults) showed this. In the former the cavity was of the size of a lentil, and in the latter, of a coffee-bean—the inner surface not being smooth, but beset with leaf-like and fibrous projections growing from the sides, and sometimes almost filling the cavity. In these cases, the cavity is formed by liquidation of the originally solid connective substance, and thus the outgrowth of the remaining tissue takes place in the form of processes. Similar attempts in the formation of a joint are to be seen in what are termed "false" joints, where the connective material between broken fragments of bone, at first solid and fibrous, undergoes solution, and the formation of a thin capsule takes place: the synovia-like mass being seen to escape at times under operations. The lower-jaw articulation illustrates the normal maintenance of an earlier developmental stage. The thick elastic fibre-holding material overlying the cartilage substance, generally has a number of fine projections, which, although mainly projecting into the cavity, yet is at times partly grown together with the tissue of the meniscus. Similar illustrations are obtained in examining the connection of the ribs with the vertebræ. Over a layer of hyaline cartilage at the head of the rib, and corresponding tubercle of the rib, exists a layer of fibre substance, gradually springing from the substructure, and exhibiting in the layer nearest to it a peculiarly formed branching trabecular fibrous work, giving off forked fibres of various thickness, and finally terminating in pencil-like projections. Round spaces are thus inclosed by the mesh-work; and in the trabecular fibres, as well as in the structureless areolar tissue filling the spaces here and there, cartilage cells and elastic fibres are visible. The fine fibres radiate into the connective tissue towards the surface of the cartilage, which contains only a few cartilage cells, but many elastic fibres. With exception of the above-mentioned joints—namely, of the ribs, the sterno-costal and maxillary joints—in adults and in the natural condition there exists over the cartilages, either no material differing from their own, or only one of extreme tenuity, and free from elementary forms. Quite different is it with the fœtus and newly-born. In these cases, over the cartilages there exists a substance, sometimes fibrous, sometimes homogeneous, or only slightly striped, which proceeds from the substructure so entirely without demarcation, that it may without hesitation be considered as belonging to it, and only resulting from the development of the joint. What chiefly appears, and one of the best instances exist in the joints of the toes in the newly-born, is the variously formed outgrowths from the surface, in great numbers. In the cartilage of the hip, knee, and shoulder-joints, and others also, they are more scanty. The most ordinary form is the foliaceous. Along with the single projections, bush-like and branching forms also exist, which, like the substance from which they grow, are at one time structureless or finely striped, at others fibrillated and twisted, behaving like ordinary areolar tissue under reagents. In some are to be seen elastic fibres and cartilage cells. Those cases showing only traces of the projections, are specially interesting as

giving an insight into the formation of synovia by solution of the tissues and the smoothening of the cartilage in a complete joint.—*British and Foreign Medico-Chirurgical Review* from *Virchow's Archiv.*, No. 5, 1855.

MATERIA MEDICA AND PHARMACY.

5. *Glycerine as a Nutrient and Alterative.*—Dr. W. Lauder Lindsay, in order to test the nutrient properties of glycerine—its power of increasing the weight and improving the vigour of body—used it internally himself, to the extent of two or three teaspoonfuls daily for several weeks. "For the space of a month," he says, "I took two teaspoonfuls every morning in coffee, which I found to be the most palatable mode of using it. My diet and daily occupations were the same as before I began to take it; my exercise, in consequence of protracted bad weather, rather less than usual. The result was a gain of weight to the extent of 1½ lbs. at the end of the first fortnight, and of an additional ½ lb. at the termination of the second—in all, an increase in weight of 2 lbs. On discontinuing the glycerine, my weight gradually fell: and after an interval of six weeks, during which I have not used it, I find myself 1 lb. lighter than before I began to take it daily. It produced no other appreciable effect. I have tried it as a dietetic remedy along with various articles of food, and in divers combinations. It is so readily miscible with fluids of all kinds, that there can be no difficulty in its administration. The pure concentrated glycerine of Price's Company is too pungently sweet to be used alone or undiluted; and I may here remark that, as a general rule, whether for internal administration, or for external application, it ought to be diluted, the degree of dilution being regulated by the practitioner, according to the purpose for which he prescribes it. I have sometimes sweetened coffee with it instead of sugar. Coffee so made, however, has a somewhat peculiar taste, which might prove objectionable to some fastidious stomachs; but when it is sweetened only partially by glycerine, or when glycerine is superadded to ordinary sugar, the beverage is exceedingly pleasant, and quite free from any peculiar flavour or taste. It might be used daily to a considerable extent, when thus mixed with coffee, or chocolate; it is perfectly miscible, and does not betray its presence by floating oil globules or otherwise. In such circumstances, it behaves precisely like a syrup. Tea, to which glycerine has been added in a similar way, is much more apt to be flavoured by it, but the taste is not likely to be regarded generally unpleasant, unless it is added to the extent of two or three teaspoonfuls per cup. It also sweetens milk or cream very pleasantly. A mixture with water is very palatable, and is, undoubtedly, its most ready and cheap mode of administration.

I carefully observed its effects, as a nutrient and alterative, in eight patients —four males and four females—to whom it was given in doses of two or three tea or tablespoonfuls daily, for the space of a month. They were weighed, at intervals, to ascertain their gain or loss of flesh; for I found that apparent physical improvement was not a reliable criterion of real physical growth—that a most marked amelioration in the general health did not always coincide with increased weight of body. All the patients, before taking it, were more or less anæmic, emaciated, and feeble; in all the diet, exercise, and occupations, were otherwise the same. At the end of the month, all of them *appeared* greatly improved in their general condition; they seemed plumper and stronger, and the countenance, in some, was even ruddy. In one case—a female—there was a large and fiery carbuncle over the sacrum, which was opened by crucial incision in the ordinary way; in another case—a male—there was a number of abrasions and ulcerations on different parts of the body, the result of self-mutilation by friction against walls, or by picking with his finger nails. The carbuncle, in the one case, and the ulcers and abrasions in the other, disappeared, or were healed, during the use of the glycerine. I shall

here guard myself against confounding the *propter hoc* with the *post hoc*. A most marked amelioration *followed* the use of the glycerine, and *apparently in consequence of* its use. But further experiments will be necessary to establish the accuracy of the latter statement. The comparative gain and loss in weight will be best set forth in a tabular form. Some of the patients—case No. 3 in particular—were taking little or no ordinary food; and, in these cases, the glycerine would appear to have acted as a substitutional food of an agreeable kind.

PATIENTS.			DURING FIRST FORTNIGHT.		DURING SECOND FORTNIGHT AS CONTRASTED WITH FIRST.		AT THE END OF MONTH.	
Sex.		Age.	Gain.	Loss.	Gain.	Loss.	Gain.	Loss.
No. 1.	Males . .	30	...	2 lbs.	6 lbs.	...	4 lbs.	...
" 2.		23	2 lbs.	...	4 lbs.	...	6 lbs.	...
" 3.		28	8 lbs.	...	...	1 lb.	7 lbs.	...
" 4.		28	neither		neither		neither	
" 5.	Females	52	5 lbs.	...	...	3 lbs.	2 lbs.	...
" 6.		28	...	2 lbs.	...	6 lbs.	...	8 lbs.
" 7.		30	neither		...	2 lbs.	...	2 lbs.
" 8.		30	3 lbs.	...	3 lbs.	...	6 lbs.	...

This table, however, does not fairly exhibit the fattening or strengthening effects of glycerine; inasmuch as, in consequence of all the patients labouring under forms of mental derangement, there were causes constantly in operation, to interfere, or having a tendency to interfere, with the effects of the glycerine, by rapidly reducing the physical strength—such as paroxysms of mania, or fits of melancholia. I should anticipate more favourable results, or at least results more free from fallacy or ambiguity, from experimentation on the patients of a general hospital, or upon patients met with in private practice. I do not think that the fluctuations in the weight, as given in the above table, are greater than can be accounted for by changes in the mental and physical constitution of the patients—changes over which an experimenter has no control. But such experiments are necessarily on too limited a scale, and are too short in their duration, to enable us to arrive thereby at determinative results; they are only mentioned suggestively for the benefit of others who may be inclined, or have opportunity, to pursue the subject. All the patients, above mentioned, took the glycerine readily, with the exception of two, who equally refused food and medicine—the one from a religious belief that it was inherently wrong, and that he could not do so without violating his most solemn vows, and thereby doing irreparable injury to his conscience—the other merely from mischievous obstinacy. It is sometimes possible to persuade insane patients to take medicines, who resolutely refuse food; under such circumstances, the value of cod-liver oil, glycerine, or similar substances, is at once apparent. Should the therapeutical properties of glycerine be fully established, it cannot fail to become a valuable remedy—both in respect to its internal administration and external application—in asylum practice. It has already been tried with some measure of success in the Dumfries, Montrose, and Perth asylums.

With a view to the same object—the discovery of the existence and extent of the fattening effects of glycerine on the animal body, if such there be—I have recently experimented on various of the lower animals, such as fowls, rabbits, and mice, mixing glycerine with their ordinary food. At the same time, I have made comparative or contrastive experiments on the same animals with cod-liver oil, and with common food. For instance, a cock of a cross Cochin-China breed, was fed on bread-refuse, etc., steeped in glycerine (Price's pure concentrated), and a hen of the same kind, on similar food, soaked in cod-liver oil. During the first fortnight of the experiment, the former gained fourteen, while the latter only gained seven ounces.

The following table will illustrate concisely the comparative increase of

weight under ordinary food alone, and in conjunction with glycerine or cod-liver oil. The animals were weighed at intervals of about a fortnight, and were similarly placed in regard to confinement, etc.

NATURE OF FOOD.	ANIMALS.	FORTNIGHTLY WEIGHINGS.				
		1st.	2d.	3d.	4th.	5th.
		lb. oz.	lb. oz.	lb. oz.	lb. oz.	lb. oz.
Glycerine Mixed with daily food	No. 1. Cock	3	3 14	3 11	4 8	5 8
	" 2. Hen	...	3 8	3 12	3 15	4 4
	" 3. } Rabbits	...	2 15	3 1	3 8	4
	" 4. }	...	2 8	2 11	3 4	3 8
Cod-liver oil Mixed with daily food	" 5. Cock	...	3 15	4 8	4 4	4 1
	" 6. Hen	2 12	3 3	3 9	4 4	4 2
Ordinary food alone . .	" 7. } Rabbits	...	2	2 8	2 13	3
	" 8. }	...	1 12	1 15	...	...

The glycerine was greedily licked up by all the animals, which bore every appearance of thriving vigorously under its use. In such experiments, however, it is necessary to bear in mind, or deduct from the results, the influence of confinement or deficient exercise, and of over-feeding, in fattening animals. All the animals under experiment were confined in caged, but roomy, apartments of different kinds, so as to avoid other sources of fallacy. I would suggest the propriety of instituting similar experiments on a larger scale, for the purpose of setting at rest the question, or solving the problem—whether glycerine is really possessed of fattening or nutrient properties; and, if so, to what extent these are available in medicine.

I have given glycerine internally in a variety of affections, in combination with various alteratives and tonics, such as iodine, iodide of potassium, quinia, and iron, or as the basis of expectorant or demulcent mixtures. I have found it to answer extremely well as a solvent or suspending agent, or a vehicle. All the alteratives or tonics which have recently been combined with cod-liver oil, might be administered in a much more agreeable form, if dissolved or suspended in glycerine. Such are iodine and quinia, separately or conjoined; the iodide, lactate and bromide of iron; the proto-iodide, biniodide and bichloride of mercury; the iodides of arsenic and sulphur; and the valerianate of zinc. By the majority of patients to whom it was given as a nutrient, it was much relished. Indeed, I have been importuned by one person—a female—to prescribe it for her, on the plea that she was of delicate constitution, and that the fat-producing, invigorating properties of the glycerine could not be doubted. This was probably an ingenious deduction from the fact, that some of her companions had been weighed at intervals, during a course of glycerine, and had been found to gain in flesh and plumpness. A similar opinion, in regard to its apparent fattening and strengthening properties, has been expressed to me by others who have observed its effects. Its sweet taste would probably render it a favourite with children, in prescribing for whom it is frequently necessary to consult the caprices of the palate. There are rare exceptions, however, to its general acceptability. A patient of Dr. Stirling's—a man of about sixty, labouring under chronic asthmatic bronchitis—complained, after using it in doses of three teaspoonfuls daily for ten days, that it seriously impaired his appetite, and that he felt as if "filled with oil." It was persevered in for a few days after this sensation was experienced, but it became ultimately necessary to discontinue its use.

The great advantages of glycerine over cod-liver oil, consist in its pleasant sweetness and its freedom from all disagreeable odour; in its ready solubility in, or miscibility with, ordinary fluids; in the absence of the principles, which in animal and vegetable oils, so frequently nauseate and purge; and in its

solvent and other properties, which render it so useful as a vehicle or basis for pharmaceutical preparations."—*Edinburgh Med. Journal*, Sept., 1856.

6. *Proto-iodide of Iron Plaster.*—M. ALQUIE speaks highly of the resolvent power of this plaster in the case of white swelling and lymphatic enlargements. Experiment has shown that its employment is much more satisfactory when made by combining its separate elements with the plaster, than by the introduction of the ready-formed proto-iodide. Take of iodine 1, powdered iron filings 2, and pitch plaster 30 parts. Melt the plaster gently, and add the filings, and then the iodine, previously dissolved in 10 parts of alcohol, stirring well with an iron spatula, until a greenish-brown colour is produced. It is then spread and cut into strips for application.—*Med. Times and Gaz.*, Oct. 25, 1856 rom *Bull. de Thérap.*, tome l. p. 503.

MEDICAL PATHOLOGY AND THERAPEUTICS, AND PRACTICAL MEDICINE.

7. *The Nat[illegible] of Phthisis, and particularly of the Pretubercular Stage.*—Dr. EDWARD SMITH [illegible]d a very interesting paper on this subject before the Medical Society of Lond[illegible] (Oct. 25th, 1856). After pointing out the advantages of special hospitals in [illegible] study of diseases, the object of the author was to show, 1st. That the treatmen[illegible] of phthisis, in order to be commonly successful, must be in the pretubercular stage. 2d. That there is a pretubercular stage, which is capable of easy demonstration, and in which treatment would commonly prevent the deposition of tubercle. And 3d. That the nature of phthisis essentially consists in a lessened inspiratory action of the air-cells of the lung. He admitted that phthisis was induced by a multitude of causes, but he affirmed that the tendency of all those is towards exhaustion, and that they, although many, have one common mode of action in inducing the disease. He criticized minutely the prevalent opinion that phthisis is a disease of blood, and proved that whatever may be the state of the blood in the disease, there is no universal condition of it which attends the origin of the disease, or which is really causative of it. The state of the system, which is one of the causes of phthisis is one of both solids and fluids, and is to be expressed rather by a general predisposition to the disease than by a specific state of a part of the system, viz., the blood, in which the elements of the disease had never been found, nor had been directly transmitted to another system. He also proved, from his own investigations, that the functions of alimentation were not at fault as causative of phthisis, by showing that the quantity of food taken in the early stage is equal to that in health: and by a reference to the feces, solids in the urine, biliary and cuticular excretions, he showed that there was no larger excretory waste than occurs in health. The lessened action of the air-cells he proved from the lessened vital capacity, feeble inspiratory power, and lessened mobility in the earliest stage of the disease; the consequent lessened vesicular murmur, harshness of respiration, and flattening of the chest, with slight dulness, indicative of atrophy of the lung. He also proved that the signs of lessened vesicular action are found in all those cases which, by common consent, are said to be prone to phthisis, and mentioned instances in his own practice at the hospital in which the vital capacity was reduced to two-thirds or one-half of the normal quantity, without there being any evidence of the deposit of solid material in the lung. This stage of lessened vesicular inspiratory action without any evidence of tubercular deposition, he designated as the first stage of the disease, and is one in which every hope of success may be entertained from suitable treatment. The second stage was that of tubercular deposition, and the third that of destruction of tissue, whether to the extent of softening only, or to the further degree of the formation of a cavity. He then proceeded to show the connection between the act of inspiration, and

the circulation through the lungs, and the importance of maintaining a balance between the systemic and pulmonic circulations, and explained the especial liability of the apex of the lung tubercles, by a consideration of the mode of action of the lung, whereby the cells of the apex must at all times be less perfectly distended than those at the base, and consequently have less circulation and vital influences. He discarded the notion of the deposition of tubercle in the lung from the blood; and, having referred to Dr. W. Addison's theory of the formation of the tubercle in the lung from degenerated epithelium, showed how readily the air-cell is rendered fit to be a receptacle of such morbid products, when its action and vital influences are lessened or lost. The extreme liability of the lungs to the deposition was not from any question of the blood, but from a consideration of the peculiar action of extension and retraction of the air-cells (as he had demonstrated) and from the immense number of such fitted receptacles as the air-cells of the lungs offered. He believed that phthisis and scrofula are distinct diseases, and that while they may be sometimes causative of each other, their co-ordinate occurrence was chiefly accidental. He also explained the occurrence of hæmoptysis before the deposition of tubercle, upon the principles now laid down, and pointed out the impropriety of any attempts to arrest it directly, and also of interfering with that degree of increased frequency of respiration and pulsation which nature sets up as a prophylactic measure when the amount of circulation in the lungs is so greatly lessened, as it is in all stages of phthisis. The discussion of the proper treatment, based upon these views, was reserved for a future occasion, but he strongly urged his professional brethren to recommend to the community the importance of a frequent examination of the chest of the younger members of families, with a view to the detection of the disease in its pretubercular stage. —*Med. Times and Gazette*, Nov. 1, 1856.

8. *Scrofulous Deposit.*—Küss considers (*Canstatt's Jahresbericht*, 1855) that pulmonary tubercle, so called, only consists in the heaping together of epithelial cells in the various vesicles of the lungs, and that all its metamorphoses arise from their destruction. In this way, he asserts that tubercle in the various glands, the intestinal mucous membrane, and the medulla of bone, &c., is easily to be explained as arising from the globules existing therein. Thus, according to him, tubercle is not a foreign heteromorphous material, but simply the results of proliferous cell elements. By Mandl (*Archives Générales de Med.*, Avril, 1855) scrofulous deposit is considered to be a crude mass, only exhibiting corpuscular and other arrangement as the result of the method in which it is torn up. He determines that it has no specific histological character, and that the fatty and shrivelled elements of reticulated cancer, and many other products, are to be compared exactly to tubercle corpuscles. According to Engel (*Prager Vierteljahrsschrift*, Buch, 1855, Band xii. p. 1), tubercle at first consists of an amorphous exudation, in which cells are formed at a later period, which gradually undergoes a fatty or calcareous change, and softens.—*B. and F. Med.-Chirurg. Rev.*, Oct., 1856.

9. *Treatment of Typhus and Typhoid Fever.*—Prof. Dietl, of Cracow, has just published an interesting paper, in which (like Graves) he advocates a nourishing and tonic regimen in fevers, instead of the severely antiphlogistic measures which had been too much in vogue. The dietetic part of the treatment he considers as more important than the pharmaceutical; and advises that, instead of combating the disease, we should strive to strengthen the patient, to enable him to overcome the attack. Good nourishment and pure air are, therefore, indispensable. He thinks that the diet should not consist of weak slops, such as tasteless beef-tea, gruel, thin milk and water, and diluted tea; and advises the diet to be fluid, sapid, and nourishing—the milk to be unreduced by water, and the beef-tea to be strong.

He considers *cold applications to the head* to be injurious, increasing the sopor without diminishing the heat; for the heat and stupor in typhus are the result of a dyscrasia, and not of a simple cerebral congestion, and, moreover, the continued cold has a paralyzing effect on the nerves and bloodvessels.

As regards internal remedies, he admits there are few of much service. He assigns considerable importance to the use of mineral acids; and gives a preference to the administration of *phosphoric acid* in frequent and moderate doses, as being more agreeable, and less likely to disturb the digestive functions.

He considers *quinine* to be a medicine of the greatest service in typhus; for, though no specific, it certainly removes many serious and dangerous symptoms, when it is carefully used. The beneficial influence which it exerts on the nervous system is very marked. When, from the tenth to the fourteenth day of the fever, we have the face becoming pale and contracted, accompanied with restlessness, excitement, rigors, subsultus tendinum, and delirium, then quinine is indicated. Its operation is so rapid and so sure, that we can reckon on a diminution of these symptoms in a few hours from its use. According to Dietl, the most restless, furious, and delirious patient becomes, under its administration, in five or six, or at most in twelve hours, perfectly calm and self-conscious—knows his friends, and gives rational answers; the hands and tongue are no longer tremulous; the hurried and often interrupted respiration becomes regular and quiet; the burning skin turns moist; the pulse is diminished in frequency; and a refreshing sleep occurs, which is the ordinary forerunner of a rapid convalescence. In order to attain these beneficial effects from quinine, the remedy must be given in large doses (at least five grains at once), and in solution rather than as pills or powders. All other medicines must be omitted also during its administration. Dietl commonly administers it thus: ℞.—*Quinæ sulph.* ʒj; *Acidi sulph. dil.* ʒss; Aquæ ℥vj.—M. Each ℥ss of this contains five grains of quinine. In typhomania he gives ℥j—℥ij of this mixture to adults in the worst cases of nervous excitement; in mild cases he gives ℥ss every two hours—continuing the administration of it until the bad symptoms have yielded. He has never seen a fresh exacerbation of the symptoms take place in cases treated thus with quinine. In severe cases Dietl has sometimes given ʒij of quinine, often from ʒss to ʒj, within the twenty-four hours, and has never seen any bad results. He advises discontinuance of such large doses whenever the nervous symptoms have become improved. The administration of quinine is frustrated, or rendered injurious, in cases where there exist the complications of gastritis, or profuse diarrhœa; for, when either of these complications is present, the quinine is not found in the blood, or in the urine, but remains unabsorbed in the stomach, or passes off in the stools. As the gastritic affections are on the decline, however, the drug may be given in small doses.

Alum is considered useless in checking the profuse diarrhœa of fever. *Calomel*, in small doses of one-fourth to one-half gr. every second or third hour, has been found by Dietl to be very efficacious in arresting the diarrhœa, and changing the character of the stools. He justly remarks, however, that diarrhœa must only be retained in extreme cases, inasmuch as a moderate diarrhœa is often critical, and beneficial in carrying away the injurious typhus products.—*Ed. Med. Journal*, Oct., 1856, from *Wien Wochenschrift*.

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10. *Diabetes cured by Proto-Iodide of Iron.*—Dr. Burguet was consulted in the month of February last by a lady, fifty-five years of age, mother of sixteen children, who complained of having been tormented for twenty-seven years by an insatiable thirst. Her mouth was always dry; the urine abundant. Five years ago, that is to say, at the cessation of menstruation, emaciation became considerable, and the patient lost her strength; the pulse became small, but not frequent; tongue neither red nor coated; very small appetite; the urine was clear and limpid. The patient was in the habit of passing it five or six times in the night. Analysis proved the presence of sugar.

M. Burguet commenced giving the proto-iodide of iron in small doses, which he gradually increased. From the first day the thirst diminished, the urine became less abundant, and the strength returned. On the 15th of August the urine, again analyzed, offered no trace of sugar; four months after the health of the patient continued good.—*Dub. Hosp. Gaz.*, Nov. 15, 1856, from *Union Méd. de la Gironde*, Sept., 1856.

11. *Rennet in Diabetes Mellitus.*—Dr. James Gray, in an interesting paper (*Glasgow Medical Journal*, Oct., 1856), speaks very confidently of the curative powers of rennet in diabetes. He says that he has treated twenty-eight cases by it, and asserts it to be more effectual than any other remedy.

The basis of his theory is, "that if rennet out of the body converts a solution of sugar into lactic acid, it may possess a similar property within the body. Bearing in mind, too, that lactic acid is found in the juice of flesh, and, according to Liebig, is a supporter of the respiratory process, I conceived that if sugar formed in the body of a diabetic patient could be converted by the rennet into lactic acid, it would be burned in the lungs; and that, if a larger quantity were formed than could be consumed in that way, it would be excreted by the kidneys. In this I was not mistaken, for lactic acid was more than once detected in the urine of my first two patients. To say that rennet is an infallible remedy in any or every case of diabetes, would be overrating its virtues. Where this complaint is complicated with organic disease in any organ, the organic disease must be removed before we can look for a cure. It will, at least in such cases, ameliorate the symptoms, mitigate suffering, and tend to lengthen life—the greatest desiderata after an effectual cure. I have been led, from my own personal experience, to classify diabetes under three heads:—

"1. Where the stomach is primarily affected, as has been shown by the experiments of M'Gregor (to whom I am indebted for my first clear views on this disease), and since by Bouchardat, who, as already stated, discovered a substance similar to diastase, and possessing the power of converting starch into sugar.

"2. Where the liver is primarily affected, as has been prominently brought out by the experiments of Bernard. He has shown that, besides its use in the economy as an eliminator of bile, the liver is a sugar-forming agent, and that this power rests with the tissue of the organ, which seems to act the part of a ferment on the nitrogenous fluid circulating in the body, and from which sugar is eliminated; thus one equivalent of protein, fifty-two of oxygen, and four of water may be represented by two equivalents of grape sugar, three of urea, and eighteen of carbonic acid.

"In support of such a doctrine, I may state that I have kept patients for weeks on a strictly animal diet, where not a single atom of starch or sugar was taken, and where not a particle of sugar could be detected in the feces, and yet sugar was excreted with the urine in large quantities.

"3. Where both stomach and liver are simultaneously affected.

"I am inclined to term the first diabetes gastricus; the second, diabetes hepaticus; and the third, diabetes gastro-hepaticus; and have adopted such a division the more, that it does not locate the disease in one special organ, believing, as I do, that something of truth may be found on either side.

"In diabetes gastricus, where the hydro-carbons come into play, and where uncomplicated, I believe the rennet treatment will be found eminently successful. The mode I adopt and recommend of preparing the rennet is the following: The stomach of a calf (and the younger it is the better) is gently washed with water, taking care not to injure the mucous membrane; it is then well salted, tied up, and allowed to dry. After this, it is cut up into small pieces, macerated in a pint and a half or two pints of water, according to the size of the stomach, for four days, or longer in the winter, shaking it at intervals; the fluid is then poured off and bottled; and, to test its power, a spoonful may be added to a pint of warm milk, which if it curdles, it is now fit for use. Some stomachs are better than others, in which case the preparation is much stronger and more efficacious. This depends materially upon the honesty of the party from whom the bag may be procured; for I have been told by a respectable butcher that the parties who are in the habit of selling bags for this purpose not unfrequently take a dozen or so of stomachs, macerate them with salt and water, pour off the fluid, and dispose of it to farmers for dairy purposes; the stomachs are then tied up, and passed off as genuine first-hand articles. I may also call attention to a fact, well known to dairymaids, that after a thunderstorm rennet is useless to curdle milk; thus showing that a certain electric condition of the atmosphere exerts an influence upon the fluid. A little spirits, or decoction of sparrowgrass,

may be added, to make it keep. The dose of rennet thus prepared is a tablespoonful, three, four, or six times in a day, usually about half an hour after each meal, and during the process of digestion, followed shortly after by an alkali, to neutralize the lactic acid formed. That which I recommend is the alkaline tribasic phosphate of soda; but the carbonate of potash will answer very well, either alone, or combined with the tincture of nux vomica, in five or ten drop doses. The nervous system in these cases seems at fault, and the nux vomica here serves as a stimulant and valuable tonic. In many of the cases treated, I have further recommended the inhalation of chlorine, from the power it possesses of destroying putrefaction and arresting the fermenting process. In all, I have now treated twenty-eight cases of diabetes by rennet, of which nineteen were males and nine females. Of the males were five gentlemen following no profession, two youths, one chandler, one labourer, one engineer, one wright, one ploughman, one policeman, and six farmers; females, one mill girl, three maid servants, and five domestic married females. Of these, seventeen were more or less connected with agricultural pursuits. The ages varied from eleven to sixty-five years; with three exceptions, all were in comfortable circumstances; eleven were in the habit of smoking, or using tobacco in the form of snuff; and although a few occasionally indulged to excess in alcoholic liquors, this was not by any means a general feature.

"The complications of most frequent occurrence I found to be phthisis; next, dysentery; and, lastly, anasarca, depending upon remote disease of the kidneys. The diet which I advise at first is strictly animal; and where the poverty of the patient does not permit of the free and generous use of the better quality of butcher meat or eggs, I recommend the heart, lung, liver, and kidneys to be substituted, as many good and savory dishes can be made from these organs; a soup made from the liver answers admirably in the troublesome constipation which accompanies this disease. Bread free from starch may be made as follows, according to the recommendation of Prout and Christison: Six eggs beat up, to which are added four ounces of butter; make into cakes with finely-ground bran. An excellent pudding is also made with curds, well washed, dried, and powdered—butter and eggs—which is salted and spiced to taste. Salted fish makes a good change, and does not increase the thirst so much as might be supposed. A variety of vegetables may be also given, as greens, kidney and French beans, and nettles even make an excellent dish, lettuce, artichokes, &c. As it is impossible to keep a patient for any length of time on a strictly animal diet without doing injury, I therefore add, after a little while, bran bread as found in the baker's, which I think quite equal to the gluten bread as it is made in this city, and much less expensive.

"If we consider the slow and insidious approach of diabetes, and that it generally has a firm footing before the patient is alarmed into taking advice upon his increasing symptoms, and that for weeks or months the true nature of his complaint may remain undetected even by the physician, we will not be surprised that it should take a considerable time to be entirely removed. The shortest period in which I have found sugar to disappear has been two weeks, the average from that to nine months. The importance of air and exercise cannot be over-estimated, as they are indispensably necessary to improve the general health. Hence I do not consider an infirmary a proper place for treating a diabetic patient. Attention to the functions of the skin is no less requisite, for which purpose the tepid bath, followed by friction, should be used, as also anointing the body with oil. The patient being usually melancholy, and a prey to gloomy apprehensions, it is of paramount importance to gain his confidence, and, if possible, infuse hope into his desponding heart. This the physician should know how and when to do in each respective case. In a word, nothing should be left untried which might tend either to improve or invigorate the body, or restore serenity and hope to the mind.

"Where diabetes is complicated with phthisis, I prescribe cod oil and morphine, and although I have never known such a case to recover, I have found such much benefited. I have also seen this disease follow as well as precede consumption. The preparation I have used with most success in such cases was a solution of phosphorus in chloroform, with the tincture of benzoin. Of

the twenty-eight persons treated, seven have recovered; that is to say, they have regained the weight lost, their urine was diminished in quantity to about the usual standard, and contained no sugar, and they expressed themselves as being 'fit for their work, and in as good health as they ever were.' Three died; two from disease of the chest, and the other from dysentery, complicated with effusion of pus in the left pleura; and seven still remain under treatment. Of the remaining eleven, while I have lost sight of several from the fact that they were at considerable distance from town, I hold letters from others, expressing their thanks for benefit derived from the treatment. In thirteen of those cases, organic disease, and chiefly of the lungs, could be detected. I may finally remark that only a few of those cases had not been previously under the treatment of other medical men, so that there could be no mistake in the diagnosis."

12. *Sugar in the Urine of Women in Childbed and while Nursing; and in some Women during Pregnancy.* By Dr. Hyppolyte Blot.—Up to the present time the presence of sugar in the urine has been considered by physicians as a pathognomonic sign of one of the gravest of maladies, diabetes. Numerous researches which I have engaged in, and which I have now the honour of bringing before the Academy, have furnished me with results which, at least in some degree, diminish the value of glucosuria as a diagnostic symptom of disease. In fact, it clearly appears from these researches, that sugar normally exists in the urine of all women in childbed, of all women while nursing, and of a certain number even during pregnancy.

I would say, in order to give more weight to the results which I have obtained, that in my investigation I have associated with myself, for the chemical part of the work, M. Reveil, Professor to the School of Pharmacy, and that in several instances I have had recourse to M. Bertholot, whose beautiful works on organic chemistry are well known. Most of the facts mentioned in the following extract have been, moreover, shown by me to a great number of physicians, and in particular to two members of the Academy, M. Rayer and M. C. Bernard.

In order to arrive at the demonstration of the fact which I announce, I have had recourse to all the means generally employed to detect sugar in a liquid. They have been used as follows: first, the urine experimented on has been treated by the test of the solution of copper and potass. The solution of Fehling has been always used, and to avoid all error, the urine has been previously treated with acetate of lead, in order to free it from the other matters which might interfere with the reaction of the test. For my later researches this mode of purification has been replaced by another still simpler, more expeditious, and one often employed by M. Claude Bernard in his experiments on glucogenesis; this consists in filtering through animal charcoal. As another reactive, I employed the caustic alkalies, potass and lime, which give with the urine a brown colour, more or less deep.

The third and principal means of proving the presence of sugar to which I have had recourse is the fermentation by the addition of yeast; and I have constantly obtained, on the one part, alcohol, easily recognized by its peculiar characters; and on the other, carbonic acid, readily absorbed by potass. I would add that I ascertained by experiment that the liquid residue of fermentation no longer was capable of reducing the copper in the solution of Fehling. Usually the process of fermentation (at a moderate temperature between 30° and 55°) took from twelve to twenty-four hours to be completed. Lastly, having slightly concentrated and perfectly discoloured the urine to be examined, I could see, thanks to the kindness of M. Bertholot, that this urine caused the plane of polarization to deviate to the right.

It thus appears that the main fact which I wish to establish cannot be doubted, viz., that sugar exists normally in the urine of all women in childbed, of all women when nursing, and of a considerable number of women during pregnancy. Since the urine of such persons presents all the characteristics which belong to urine containing sugar: 1st, reducing the copper in the cupro-potassic liquid of Fehling; 2d, turning brown when boiled with solution of caustic potash, or lime; 3d, yielding, on fermentation, alcohol and carbonic acid; 4th, causing polarized light to deviate to the right.

Let us next see in what condition this glucosuria is met with.

In all pregnant women (forty-five times out of forty-five cases examined) it is at the moment the milk secretion commences that the sugar makes its appearance in the urine in sufficient quantity to be detected. In many women it only appears at this epoch; in some it appears earlier, but usually in very small quantity.

If the secretion of milk continues, sugar continues to be passed in the urine with certain daily variations to be afterwards explained.

When the secretion of milk is abundant, the proportion of sugar is, in general, great; when the milk is scanty, the urine contains little sugar; thus an examination of the urine may serve, in some degree, to indicate the value of a nurse. If the milk secretion is diminished or dried up from any cause whatever, but especially by the development of any morbid state, the sugar diminishes, and completely disappears; if the health improves, and the milk returns, the sugar reappears in the urine. Lastly, the urine continues to contain sugar so long as the secretion of milk persists. I have found a very appreciable quantity in a woman who continued to give milk for twenty-two months. It is unnecessary to say that such persons present no symptoms of diabetes; on the contrary, that in general the better the health, the more rich in sugar is the urine.

When lactation ceases the sugar disappears from the urine; quickly in women who do not nurse, more slowly in those who having nursed begin to wean their children. In the latter, the disappearance of the sugar offers some peculiarities —thus, I have happened to find it one day and not the next, and yet detect it again on the third; but it constantly occurs that the amount of sugar is reduced to a very small proportion from the time when the tumefaction of the mammary fluid consequent on weaning has subsided. From these considerations it seems impossible not to conclude that there is a close connection between this physiological glucosuria and the secretion of milk. I have already stated that the quantity of sugar varies in different individuals, and at different periods of lactation. I now add, that it is ordinarily present in much smaller quantities than in diabetes. The quantity which I have obtained from different specimens varied from 1, 2, even up to 12 parts in 1,000.

Among women during pregnancy, sugar was detected in the urine of about one-half of those observed; I believe, though I cannot positively affirm the fact, that this peculiarity was met with when the sympathetic phenomena of pregnancy, as regards the mammæ, were very well developed; it was wanting, on the contrary, when the mammæ remained, so to speak, indifferent to what was going on in the uterus.

This passing of sugar in the urine during lactation, so easily recognized in women, I naturally concluded took place in other mammalia, and, indeed, I have observed the phenomenon in the cow. In short, in nine observations made on animals of this sort, I have detected the presence of sugar in nine, that is, in all observed. If the Academy will allow me, at another meeting I shall communicate the result of my future investigations.

Conclusions:—

1st. Glucosuria occurs in all women in childbed; in all women while nursing, and in about one-half of all pregnant women.

2d. This interesting fact is proved by the four tests already mentioned.

3d. This secretion of sugar in the urine diminishes considerably in activity, and even ceases during morbid conditions, but returns with returning health and lactation.

4th. The physiological glucosuria of women under these circumstances is in immediate connection with the secretion of milk.

5th. This glucosuria is not confined to the human female.—*Dub. Hosp. Gaz.*, Nov. 15, 1856, from *Bull. Gén. de Thérapeutique.*

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13. *Presbyopia in Bright's Disease.*—M. Trousseau states, that the diagnosis of doubtful cases is very often much assisted by ascertaining that there has been an increase of presbyopia, requiring a rapid increase in the power of the spectacles. Whenever we observe this, in a marked degree, we must always examine whether the patient is not suffering from Bright's disease or from diabetes

mellitus. One of these affections will be found present in the great majority of cases, at least if no hemorrhoidal flux or metrorrhagia be present to account for the change. Otherwise, we can almost always detect albumen or sugar in the urine.—*Med. Times and Gaz.*, Oct. 25, from *Gaz. des Hop.*, No. LIV.

[We have under treatment at present a case of diabetes mellitus, the subject of which complains of the increase of presbyopia, and which so far as a single cure goes, is confirmatory of the statement of M. Trousseau.—Ed.]

14. *Brown Colour of Skin, with Normal State of the Supra-renal Capsules.*—Mr. George May presented to the Reading Pathological Society supra-renal capsules, which before death were supposed to be diseased, from the brown colour of the skin, and other diagnostic signs. In January last, he was first called to see the patient, a male, 46 years of age, who had congenital blindness, but who, with the exception of slight attacks of gout, had enjoyed good health. His breathing became hurried, and he was easily fatigued, which was the more remarkable as he was accustomed to much exercise. The tongue was pale and furred, pulse feeble, and the rest much disturbed. This discoloratien of the skin was most marked in the face, neck, axilla, arms, and legs. Some brown patches, about the size of a pea, were scattered over the body. He gradually got weaker; and after suffering from cough, vomiting, and diarrhœa, he died in a convulsive and comatose state. On examination after death, the renal capsules were perfectly *normal*, the kidneys small, the left ventricle of the heart dilated, and the lungs emphysematous. The twin brother, born blind also, died much in the same state, eighteen years ago.

Remarks by the Reporter.—The case is interesting, on account of the gastric symptoms, which, in Dr. Addison's, Dr. Budd's, and Mr. Burrows' cases, as also in others recorded, formed a prominent symptom, as also the emphysema, which was observed in Dr. Ranking's case. But the most remarkable fact in Mr. May's case was the absence of all disease in the renal capsules. Possibly the diseased appearances in the cases above alluded to, are those of tuberculosis of the supra-renal capsules. Mr. Ancell, in his recent laborious work, alludes to such a change in the structure of those parts, and draws his authority from Rokitansky; but he makes no observation on the symptoms during life. Indeed, it is strange that neither Baillie, nor Rokitansky, nor Lieuteaud, gives the smallest hint about the skin. I must say I do not think, as the case before us shows, that the connection of the brown skin with diseased renal capsules is at all clearly made out. This rare case before us, of bronzed skin, was probably one of the varieties of epichrosis, from a morbid secretion of pigment, which the skin had not previously elaborated.—*Association Medical Journal*, Sept. 20, 1856.

15. *Treatment of Chorea by Gymnastic Exercises.*—Dr. Blache observes, that two indications should guide us in our treatment of this affection: 1. To restore to the will its empire over the muscular contractions—*i. e.* regularize the movements; and 2. So to say, reform the constitution of the patients.

M. Blache regarded the methodical use of sulphur baths as the best constitutional remedy for the affection, until he had recourse to gymnastics. The great success which attended the application of these in 1847, under the skilful direction of M. Laisné, to scrofulous subjects at the *Hôpital des Enfans*, induced the directors to erect large gymnasia, and extend their employment to various other diseases, among which was chorea. In the present paper, M. Blache gives an account of 108 cases so treated, 100 being first attacks, and 8 only relapses—an important distinction, as the ordinary duration of a case of chorea is diminished by a number of relapses. These 108 were divided into two categories, according to the severity of the disease; one of these being composed of 34 cases, of mean intensity, and the other of 74, in which the agitation was as violent as possible. The whole of the 34 were cured in a mean period of twenty-six days and eighteen *séances;* of the 74, 68 were cured in forty-five days with thirty-one *séances.* Therefore there remained but 6 cases which may be regarded as failures. These were examples of chronic

chorea, which in the end was also cured, requiring 122 days and 63 *séances*. Calculating in another mode, we have 102 cases in 39 days, and 6 in 122 days.

For the description of the procedure that is had recourse to, M. Blache takes an aggravated case, in which the movements are violent and speech impossible. Here the will of the subject being powerless, nothing can be demanded of him; and the gymnastics must be entirely passive. M. Laisné, aided by three or four intelligent pupils, fixes the patient on his back in bed, and retains him thus motionless for ten or fifteen minutes. He then shampoos with the open hand the chest and limbs for a long time, following this by brisk friction. Similar manipulation is pursued at the back parts of the body, and especially at the nape, and over the muscular masses alongside the spine. A *séance* of this kind lasts about an hour, and is repeated for three or four days in succession. An amendment in the disordered contractions is observed after each; the child evidences its contentment, and calm sleep is restored. The following days, without entirely discontinuing the shampooing, the child is taught to execute very regular and perfectly rhythmical movements. Thus, suppose the arms are hanging in a state of supination by the side of the body, the operator takes hold of them by the wrist, bends the forearm upon the arm, carries the latter directly upward and forward, and then replaces the forearm in a state of extension. The hands are now raised in a parallel manner above the head, and from thence they are brought down to their point of departure, always following a well-marked ternary measure. This manœuvre is executed a great number of times, with much regularity. The inferior extremities are submitted in their turn to analogous movements; the leg is bent rapidly on the thigh, and this on the pelvis, when both are brought into extension, following a binary measure.

It is clear that the manipulations employed must impart remarkable activity to the capillary system of the skin and subjacent tissues, and through this to the intimate process of nutrition. The movements are so combined, that muscles whose motions are synergetical are brought into regular and simultaneous action. Unable to contract spontaneously and with regularity, they seem quite passive, so that the limbs may be bent or extended without the will of the patient contributing to the effect. Indeed, this generally opposes it, and it is only obtainable by employing a certain amount of force. But after one or two *séances*, the hand of the operator is enabled to follow the contractions which come to his aid with regularity. Every day the command of the will over the muscular system is strengthened, the abnormal movements at the same time diminishing in frequency and intensity. Not unfrequently, during the first days, pains are excited in some of the joints by movements at all strong; but these, which some have considered of a rheumatic character, disappear after a few *séances*. After the employment of these passive movements for eight or ten days, very marked improvement is observed, for the child can now speak intelligibly, feed itself, and, in some instances, walk about the ward. He now joins the gymnasium, and takes part in the exercises, under the surveillance of the master or a monitor-pupil. These exercises are graduated, and have in view the production of regular and easy physiological movements of the trunk and limbs—movements in which the will and the attention are called into play as much as are the physical powers. A great number of the manœuvres are performed in common, and during their execution the master and his pupils sing an air in two or three well-marked times, according as the exercises are performed in binary or ternary measure. The little patients, ranged in groups, are led away by the rhythm and by imitation. Other exercises are individual, and executed by each child according to its strength, all having for their object the rousing the attention, and bringing the muscular contractions under the empire of the will.

The spirit of order and discipline exerts upon these children the most salutary influence. The attention, zeal, and great address of M. Laisné, aided by the means for insuring safety in the gymnasium, have prevented any kind of accident occurring. During the first ten days, the children pursue the exercises with ardour. They are desirous of doing well, and their dispositions seem to undergo a favourable change as they become more lively and open,

and at the same time more docile. The organic functions are remarkably influenced from the first, the appetite becoming very keen, and requiring a proportionate supply of aliment; the muscular power increasing, and even already some increase of flesh being apparent. From the tenth and twelfth day, this amendment is subjected to some check; and we must now support the will and courage of the patient, and the more so, because the children endowed with most courage, determination, and docility, make the most rapid progress. After some days of this resistance, renewed improvement is observed, and we may be sure that the cure will now prove prompt and radical. Whatever the future may reveal, hitherto no relapse has been met with.

M. Blache enters into a comparison of the relative efficacy of gymnastics and sulphurous baths; and although employed alone, the former mode of treatment is to be preferred, yet the combination of the two modes is often desirable.—*Brit. and For. Med.-Chirurg. Rev.*, from *Mémoires de l'Acad. Imp. de Med.*, tom. xix.

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16. *Intermittent Rheumatic Contractions.*—Previously to the year 1845, M. Trousseau believed that this affection was confined to nurses; but since then he has met with it in men, non-puerperal women, and children. He divides it into three forms.

1. *Benign Form.*—This is seen only in women. The patient complains of prickling of the feet and hands, and some difficulty in the movements of the fingers and toes. The fingers then become stiffened and drawn forcibly together; the thumb is brought into strong adduction, and the fingers becoming somewhat folded around it, the hand assumes the form of one holding a pen, or still better, of that of the accoucheur. The hand becomes concave, and the transverse diameter of its metacarpal portion is diminished. The spasm is accompanied by hardness of the arm and forearm. It comes and goes. Sometimes one of the upper, sometimes one of the lower extremities is affected, sometimes both of either, and sometimes all the extremities are so simultaneously. But with all this there is little pain and no general symptoms, so that the patient pays little attention to the affection.

2. *Medium Form.*—Besides these local symptoms, we have here slight febrile action which lasts for seven or eight days. There is loss of appetite, and *malaise*, but nothing serious. The contractions give rise to more pain, and recur oftener, invading the muscles of the face and pharynx, and the motors of the eye. Sometimes those of the tongue are involved, and the patient is unable to speak; but generally this is not the case at the same time that the hands and feet are the seat of the contraction. The fingers are always curved up.

3. *Grave Form.*—A young man, aged 18, was recently brought to the Hôtel-Dieu. Seized suddenly, he had fallen to the ground in a state of tetanic rigidity, the muscles of the neck, chest, and abdomen acting convulsively and curving the trunk forwards. After awhile, great distress of respiration came on, an attack of true orthopnœa, but of short duration. The face was flushed, the lips were violet, and the jugulars swollen. M. Trousseau saw several of these paroxysms, all characterized by a horrible vehemence, resembling, in all respects, an attack of tetanus. No sooner had they passed off than the patient spoke with some cheerfulness, though expressing himself with difficulty. In the intervals of these attacks he was quite well, and assisted in the duties of the ward.

Generally, when the accident commences, a patient complains of prickling in the arm, and the hand becomes curved like that of a beggar. The arm is stiffened, and a severe pain like a cramp is felt, the attack not reaching its maximum of intensity for ten or fifteen minutes, by which time all the parts attacked have become invaded. The affection is distinguished by its migratory character, short duration, and by its being accompanied with moderate febrile symptoms in the mild form, and by very violent pyrexia in the severe form. When a patient has not experienced a paroxysm for twenty-four, or even sixty, or a hundred hours, it may always be reproduced by compression of the nervous trunks. M. Trousseau first observed this when, being about to bleed the

patient, an attack was induced by applying the fillet to the arm, and this was found to be always repeated upon whichever of the limbs the ligature was applied. This is an important point in diagnosis; as by compression of the nerves, as the brachial plexus, etc., the paroxysms are always producible.

Rheumatic contraction comes on suddenly, rapidly attains a considerable intensity, reaches its maximum and then declines—the period of its entire duration varying from eight or ten days to two or three months. In the latter case it is in its latent condition, *i. e.*, reproducible at will by compression of the nervous trunks. Among other causes, a violent diarrhœa may predispose to it, and during the cholera of '54, a considerable number of cases occurred. Exposure to atmospheric vicissitudes is another not infrequent cause; but the one which is most frequent and most active, is the condition of suckling. In the 12 beds M. Trousseau has at the Hôtel-Dieu for nurses, he meets with a far larger proportion of cases than in the 50 other beds for females. At the Necker Hospital, his female wards contained 36 beds for nursing women, and 40 beds for non-nursing women, and while in the former he observed 40 cases, he had only 1 in the latter.

The disease when left to itself seems devoid of danger, the febrile action alone disturbing the functions of organic life. There is, therefore, no fear for the result. Still, in some examples of the grave form, the contractions become so violent as to call for very active procedures. Persons unaware of the nature of the affection might readily, from the apparent severity of the accidents, be induced to believe them symptomatic of very grave pathological states; but the mobility and fugacity of these symptoms show that they are not dependent on serious permanent organic lesions. During the 15 years that M. Troussseau's attention has been directed to these cases, he has never met with a fatal one.

It is evident that the affection is a neurosis, and it may be ranged side by side with epilepsy, hysteria, eclampsia, and catalepsy, and is unaccompanied by any serious lesion of brain or spinal cord. In M. Trousseau's opinion, it is also rheumatic in its nature; its great fugacity, the suddenness of the attack, and the superficiality of its symptoms, leading him to this conclusion. Moreover, blood drawn presents the buffy coat as in rheumatism, and symptoms of rheumatism have in some cases alternated with the contractions.

When M. Trousseau first met with these cases, believing them to be serious affections of the brain or spinal cord, he resorted to bleeding and to cupping along the spine. These means did undoubtedly good service, and he believes bleeding a powerful agent when the general condition does not contraindicate its employment. The intermittent character of the affection led to the employment of quinine, and it was found useful, although patients become less certainly cured than by venesection. During the paroxysms, the inhalation of chloroform is sometimes of some use, for although the contractions only temporarily cease, some relief is obtained. Opium and belladonna, in moderate doses, are also of use; but bleeding and the employment of quinine, are the means that hold the first place.—*Med. Times and Gaz.*, Oct. 18, from *Gaz. des Hôpitaux*, No. lxxii.

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17. *On the Protecting and Modifying Powers of Vaccination.*—Dr. Seaton read a very interesting paper on this subject to the Western Medical and Surgical Society (Oct. 17, 1856).

He commenced by correcting erroneous notions which some entertained as to the views held by Dr. Jenner on the protecting power of vaccination, and showed that when he spoke of this as an absolute and perfect protection, he meant that it protected to the same extent and in the same manner that smallpox itself did. He regretted that the rules and cautions laid down by Jenner for the performance of vaccination should so often be departed from, and that the operation, from its simplicity, should not always have received, either from medical men or from parents, the attention due to it. Hence it was necessary, in every case of smallpox in which previous vaccination was alleged, to ascertain accurately whether the person had really gone through the vaccine disease or not. In determining the relative protection against smallpox afforded by a previous attack of the disease casually or by inoculation on the one hand, and by vacci-

nation on the other, there was also the necessity, in the former case, of determining whether the primary disease had really been smallpox, or whether the inoculation had been successful, and there was the necessity, in both cases, of being assured with regard to the present attack that it was a genuine one, and not one of the many diseases which had at different times been mistaken for smallpox. Again, the comparison must be made in classes of individuals similarly circumstanced as to age, condition of life, liability to exposure, &c. &c. These conditions were all fulfilled in the Royal Military Asylum, in which it had been shown, by Dr. Balfour, that out of every 1000 boys admitted protected by previous smallpox, 6.15, and out of every 1000 protected by vaccination, 7.06, were attacked subsequently by smallpox. This result might be looked upon as conclusive as regards children under puberty, and shows that as regards them Dr. Jenner's opinion of the equal protecting value of smallpox and of vaccination was borne out. Dr. Seaton said these statistics were further of great value in showing that smallpox after smallpox was by no means the rare occurrence it was sometimes represented to be, a point which must always be borne well in mind in any attempt to estimate the value of vaccination. There were no statistics by which the relative protection afforded by vaccination and by smallpox could be estimated with the same precision for the adult. The statistics of the army and navy were not available for this purpose, though they afforded most conclusive proof of the general value of vaccination, these forces being at times much exposed, and four-fifths of them owing their protection to vaccination. Dr. Seaton then entered into the question of the protection afforded by vaccination under circumstances of long continued exposure during epidemic influence. Having mentioned some striking facts on this subject, he gave the results of an inquiry instituted some few years ago by the Epidemiological Society as to the extent to which medical men, whose profession exposed them of course, in a peculiar degree, to smallpox, were liable to take on the disease. It appeared from the returns, that of 347 medical men protected by vaccination, 44, or 12.6 per cent., had had variola; and of 82 who had been inoculated in infancy, 3, or 3.6 per cent., had variola subsequently. Dr. Seaton cautioned the Society against accepting these statements as representing correctly the ratio in which medical men, in the ordinary practice of their profession, were liable to variola. In the first place, the inquiries had been addressed to a great many more who had not replied. Now, as variola after inoculation, or after vaccination, was undoubtedly the exceptionable case, the probability is, that in every case in which it occurred it was reported, and that those who did not reply had not suffered. This would materially lessen the percentage. Again, the inquiries were addressed to *selected* persons: the selection being, in many instances, made because of the known extent to which they were in the habit of meeting with smallpox. And, further, a great many of the cases of smallpox thus reported were cases of variolous inoculation in the dissecting-room. Making allowance for these points, the returns would, at first sight, show that under circumstances of considerable exposure, the protecting power of vaccinia was inferior to that of variola. But an analysis of the returns, with the view of determining *the character* of the vaccination relied on, gave some interesting results. Of 18 who stated that there was no cicatrix visible, 3 had had smallpox, or 16.6 per cent.; and of 32 who made no mention about the cicatrix, 6 had had smallpox, being about the same proportion. Of 235, with one or two cicatrices, 33 had had smallpox, or 14 per cent.; but of 62 with three, four, or more cicatrices, 2 only had had smallpox, or 3.2 per cent. Taking these facts in connection with the immense value of the cicatrices as an index of the efficiency of vaccination, as shown by the researches of Mr. Marson, the results are sufficiently remarkable. It does not appear that the liability to take smallpox is any greater in those having more than two cicatrices of vaccination than in those who have had previous smallpox, so far as these observations go. Granting at once that the number of observations is far too limited to allow us to draw with confidence any positive conclusion, they certainly justify a negative one, and call upon us to pause before we admit that duly and efficiently performed vaccination will not protect the system, even under circumstances of

severe exposure, to the same extent that inoculation itself would have done, as stated by Jenner. It was clear, at all events, that there was no truth in those statements, which treat of smallpox, after inoculation, as a bare possibility scarcely to be taken into account; and of smallpox, after vaccination, as a thing almost to be expected, especially after a lapse of years. In reference to the doctrine involved in this latter phrase—viz., that the protecting influence of vaccination is liable to wear out, Dr. Seaton cited various facts to show that it ought not to be accepted. The author then proceeded to consider the modifying power of vaccination; and exhibited in a table the results of various returns to the Epidemiological Society of the observations made in various epidemics, and of the records kept by Mr. Marson, at the Smallpox Hospital. He showed that the mortality from smallpox, in persons reputed to be vaccinated, was not more than 3 or 4 per cent., under favourable circumstances, nor more than 7 under the more unfavourable, while the mortality of the natural smallpox varied from 20 to 35 per cent. He gave an account of the analysis of the cases of post vaccine smallpox in the Smallpox Hospital, made by Mr. Marson, and published in his paper in the *Medico-Chirurgical Transactions*, which Dr. Seaton characterized as the most important contribution ever made to our knowledge on this branch of the subject. By these it appeared that in persons well vaccinated, and having more than two cicatrices, the mortality was less than 1½ per cent. It was only, the author observed, by taking in connection the protecting and modifying powers of vaccination that we could arrive at any just estimate of the real value of the discovery; and he showed from the preceding facts, that of a certain number of children vaccinated in infancy, the proportion who would at any period of life take fatal smallpox was infinitely smaller than the number who, out of a given number of children inoculated, would die from the immediate effects of the operation itself. Hence the practice of vaccination was infinitely preferable to inoculation as regarded the individual. The great objection, however, to inoculation was, that it kept alive and propagated the disease. This was the case in the present day in India, in Ireland, and other places, where it was still practised, and it had been the case in England. Hence during the last century, while inoculation was in vogue, the mortality from smallpox underwent no diminution; while since the introduction of vaccination it had steadily and progressively declined. For the ten years ending 1800, the average annual mortality from smallpox within the Bills of Mortality was 1780 in a population ascertained in 1801 to be 261,233; while the four years ending 1841, it was only 1659 in a population ascertained in 1841 to be nearly 2,000,000. Then came the Act establishing parochial vaccination, and for the fourteen years ending 1855 the average annual mortality from smallpox was but 821 in a population considerably above 2,250,000. The author then showed that by far the greater part of this mortality was unnecessary and preventable; and comparing and contrasting the mortality from smallpox in this country with that existing in other countries, and glancing at the state of Scotland, Ireland, and our colonies in this respect, he pronounced our present condition to be most discreditable to us as a nation, and especially as *the* nation in which the discovery of vaccination took place, and expressed his hope that when the attention of the legislature was turned, as it would be immediately, to the subject, the medical profession would make its voice heard in proclaiming the value of the practice, and the futility of the objections that had been raised, and in pointing out and supporting the establishment of a better system for securing its benefits to the entire population.

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18. *On the Communicability of Secondary Syphilis to the Female Parent, entirely through the Fœtus.*—Dr. Jas. B. Balfour in an interesting paper read before the Obstetrical Society of Edinburgh (*Ed. Med. Journ.*, Oct. 1856), remarks "that the syphilitic taint, once acquired, remains in the system, unless removed by proper remedies; and that the taint is commmunicable to the children of those thus affected, are facts well known, and fully recognized; but it is not so generally known and acknowledged, that secondary syphilis can be communicated to a female, previously healthy, and who has never suffered

from the primary form of this disease, should she become pregnant by a man whose system retains the syphilitic taint; and this syphilitic affection in her arises from the taint which exists in the system of the fœtus, derived from the father; because unless she does become pregnant, the female exhibits no such symptoms—showing that the mere fact of coitus between her and her husband is not sufficient to produce the disease.

Dr. B. relates several cases illustrative of this.

The first case he mentions "is that of a young lady, who was of a strong healthy constitution, and who never had any syphilitic affection; indeed, her position and her history precluded the idea of such a disease ever having existed. She was married to a young gentleman, in good circumstances, who at the time of marriage exhibited no signs of syphilis, either primary or secondary, although subsequently, during his wife's second confinement, I learned from him, that several years before his marriage, he had chancre, and this was followed by secondary symptoms, which, however, were slight, and soon removed by medical treatment. His medical attendant informed him he was perfectly cured; and he had since then neither seen nor felt any symptom of the disease.

"For several months after marriage the young lady continued quite healthy. About the fourth or fifth month after being married, she became pregnant; and about two months after this she consulted me. She had observed for some time small scaly spots appearing on various parts of the body, and she complained of several hard swellings about the perineum, which were painful. The eruption, which was chiefly about the neck, arms, and legs, was characteristic of syphilitic psoriasis. The hard lumps, at first confined to the perineum, gradually extended to the vagina, and increased in size. There never were any sores about the parts; but she complained much of a burning sensation in the lumps, and of great itchiness. I continued to attend her up to the time of her confinement, and delayed any active treatment till after this event should be over, contenting myself with recommending palliative measures, and such remedies as would not interfere with the life or development of the fœtus. She had an easy confinement at the full time, and gave birth to a fine large child, which, however, in about eight days after birth, exhibited unmistakable evidence of the syphilitic taint, and was treated accordingly with perfect success, all appearance of the disease disappearing. By the time the lady recovered from her confinement, and the lochial discharge had ceased, all trace of the syphilitic affection was entirely left, and she was so completely restored to health, that I did not deem any medical interference necessary. She enjoyed excellent health, and made a good nurse, and she continued quite free from any return of the disease for more than fifteen months, when she again became pregnant. About two months after this occurred, a train of symptoms precisely similar to the first appeared, and continued as formerly up to the time of her confinement, when they again disappeared, as on the former occasion. The second child was also syphilitic, and the same remedy, as in the first case, was employed with perfect success. When the symptoms occurred on the second pregnancy, I communicated with the husband, and told him I suspected he must be labouring under some syphilitic affection, when he stated to me the facts I have already mentioned. I at once, with his own consent, put him under treatment, with the prot. iodide of mercury, and other remedies, in order to remove any taint remaining in his system; and after his wife's recovery, I put her under a similar course of treatment for some time. Shortly after this they removed to a different part of the country, and she passed into the care of another medical man with whom I was intimately acquainted. At the husband's request, I communicated to him the circumstances which I have now mentioned. Since that period, she has been twice pregnant, and on both occasions borne fine healthy children; and my medical friend informed me that she had never had any treatment after she left my charge, and that on neither occasion had she suffered from any symptoms of a syphilitic nature, nor had the children shown any sign of the disease. More healthy looking children you will scarcely meet with.

"The next case is that of a respectable young woman from the north, who

was married to a tradesman, who had no trace of syphilitic disease at the period of marriage; but he afterwards acknowledged, that two years before, he had the disease, followed by slight secondary symptoms, which had entirely disappeared under medical treatment, and he had seen or felt nothing since. This woman complained of nothing until about three months after she became pregnant; then, however, symptoms of secondary syphilis became apparent; spots of psoriasis appeared on various parts of the body; hard knots were felt on the perineum, and on the external labiæ; and within the vagina there was a hard knotty feeling over the whole mucous surface. Her child exhibited a distinct syphilitic appearance, which was removed by the usual treatment. Shortly after delivery, all symptoms of syphilis entirely disappeared; and as she shortly afterwards removed to the country, she was subjected to no medical treatment. A few months afterwards her husband died. She subsequently married a farmer. About six or eight months since I saw her, and she has borne three children to her second husband, and certainly more healthy children I could not wish to see. She informed me she had never been under medical treatment since I had attended her, indeed she never had a medical man near her, except during her confinement; and she at the same time stated that she had never suffered, during any of her pregnancies, from anything like what she had done at the first one.

"The next case is one very similar to the first in the symptoms which manifested themselves. The young woman was of most unexceptionable character, and was married to a highly respectable young man. He had syphilis in a mild form, followed by secondary symptoms, six years before marriage, for which he had been under the care of a medical man, and he believed himself to be perfectly free from the disease, as he had been quite well since. His wife became pregnant some months after marriage, having up to this time been perfectly healthy, and free from all complaint. A few weeks after pregnancy had taken place, she began to suffer from a burning pain in the region of the perineum and the vulva. Hard lumps soon made their appearance, and some spots of psoriasis appeared on the neck and at the roots of the hair of the head and around the vagina, but none on other parts of the body. These continued in a greater or less degree till after her accouchement, when they entirely disappeared. The child exhibited the syphilitic taint some days after birth, and was treated accordingly. This woman never got any anti-syphilitic remedy; but, during the latter months of the wife's pregnancy, I put the husband under regular medical treatment, after having heard from him the facts I have mentioned. That this treatment was effectual, appears to be proved by the fact, that his wife bore a second child, and she did not suffer during her pregnancy from any of the former symptoms, nor did the child show any sign of syphilis. After this they passed from my care, and I have not been able to trace them since.

"The next case is incomplete, as I left the district before the woman was confined, and I have not since had an opportunity of ascertaining how the case terminated or how she has been since; but, as I expect yet to be able to do this, I will give the case so far as it came under my notice. Her husband, twelve months before marriage, came under my care, suffering from a severe attack of syphilis. The sores were completely cured, but he was still under treatment for the secondary symptoms, which had made their appearance, when he gave up the use of all remedies. He afterwards got married to a respectable girl, who was a stout healthy young woman, who soon became pregnant by him. About six months after this she sent for me. She was then labouring under all the symptoms of secondary syphilis. There was great swelling and hardness of all the external organs of generation, and also hard lumps, with psoriasis eruption covering them on the perineum, and distinct appearance of psoriasis on various parts of the body. She stated, that she began to find those symptoms first about six weeks after she became pregnant, but she had paid little heed to them until now. She was now, however, obliged to send for me, as she said she could hardly either sit or walk from the intense burning pain in the parts, and also the almost intolerable itching, which became worse when she went to bed, and prevented her from sleeping. I used

palliative measures with great benefit to her, but without any diminution of the swelling, or hardness, or decrease of the psoriasis; and, as I have already mentioned, I left the district before her confinement, so that I can say no more about the case at present.[1]

"I might mention one other case, but I refrain from doing so, as, after a minute and careful examination into the history of the wife, I learned circumstances which did not place her character above suspicion, and I would not, therefore, found upon it as any proof in settling the point under discussion. In the others I have brought forward, I am thoroughly assured that the character of the females was above all suspicion, and the syphilitic taint arose in each case entirely from the husband.

"These cases appear to me to prove clearly that although syphilis existed in the system of the husband, it was in such a condition that it could not be communicated to the wife by mere coitus—but so soon as pregnancy took place, the disease was communicated to the fœtus, and after lying dormant in it for a few weeks, it began to manifest itself in the body of the mother, being communicated to her through the fœtal circulation—the blood from the fœtus containing the poison of the disease derived from the other parent."

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19. *Pathology of Lupus.*—K. H. Mohs, in a dissertation published at Leipsic, describes this affection as consisting of a true hypertrophy of the cutis, and ranks it amongst the so-called sarcomatous formations. The hypertrophy seems to arise from the division of the normal cutis cells, and not from a free and independent cell-formation. The author examined with the microscope a perfectly recent portion of tuberculous lupus of the face. The cutis was thickened and transparent, and of the consistence of fine glue. In the subcutaneous fatty tissue, some knot-like places existed, of the same character as the substance occupying the corium. The epidermis was thin. The peripheric part of the diseased places was tuberous, beset with hair, the middle portion being smooth and devoid of hair. The minute examination of the diseased tissue showed a granulated mass, beset with trabeculated areolar tissue-material, containing nuclei, round and oblong, and spindle and biscuit-shaped, and of a yellow colour, with one or more nucleoli, and having an intervening, transparent, hyaline, slightly granulated material; and the knotted parts in the fatty tissue before spoken of had the same microscopical characters as the general mass. Moreover, the latter tissue was occupied by much connective tissue, having an areolar arrangement, and containing capillaries but no nerves. The papillæ in the peripheric parts were normal or slightly enlarged, but in the central parts they were in small numbers of various sizes, flattened or lobate, and containing one or more vascular loops. The hair and the skin follicles in the peripheric parts were normal; but towards the central parts, elongated bodies, corresponding to the hair follicles, and consisting of united group-like epidermis cells, existed. No follicles existed in the middle portions. On tearing up the fibrous tissue, irregular masses were observed, of a clear granular material—so clear indeed in outline, that they were to be looked upon as cells of a round, oval, or spindle shape, and mostly of about half the size of epidermis cells, being probably formative cells of areolar tissue. Similar appearances were observed in an ulcerated lupus, but in the latter case the nuclei were larger and more numerous, and the areolar tissue fibres more scarce.—*Brit. and For. Med.-Chirurg. Rev.*, Oct. 1856, from *Schmidt's Jahrbücher*, No. 3, 1856.

[1] "Since this paper was written, I have seen the woman mentioned, and also the medical man who attended her during her confinement. From both I learn, that the symptoms continued unabated till her accouchement; that after this event, they gradually diminished (without any treatment), and in less than a month after delivery, every appearance of syphilis had entirely left, and she has remained ever since, and is at this moment quite free from any complaint, and in as good health as she ever was in her life. The child was syphilitic."

SURGICAL PATHOLOGY AND THERAPEUTICS, AND OPERATIVE SURGERY.

20. *Relation of Cancer to Tubercles.*—By J. Z. Laurence, F. R. C. S. Hannover states that, in 338 *post-mortem* examinations in the Friedrich's Hospital in Copenhagen, cancer was found combined with tubercle only three times. In 104 necropsies of cancer, Walshe observed only seven instances of tubercle. Paget gives a well-marked case. Lebert relates an interesting illustration. A woman, aged 62 years, died with all the symptoms of advanced phthisis. At the autopsy, crude and softened tubercles and vomicæ were found in the apices of the lungs; the peritoneum contained many partly cancerous, partly tuberculous infiltrations. The liver also contained cancerous masses, mingled with deposits of tubercle. Dr. Carl Martius of Erlangen has accurately recorded twelve necropsies of tuberculosis of the lungs, combined with cancer in other organs of the body.[1] Up to the time of publication of my essay on Cancer, I had observed two cases of the coexistence of cancer and tubercle; neither of these cases were, however, very satisfactory ones; one was carcinoma of the right auricle of the heart—a dissection-room case; the second a case of colloid (on the nature of which disease opinions are still divided) of the peritoneum. In both of these genuine crude tubercles were found in the lungs. But I am now able to produce a very conclusive case in point.

Case.—Obed O., aged 77, consulted me in September 1854, for a swelling of his right cheek, that had existed about four months before I saw him. The right malar region was considerably swollen, felt doughy, was dingy red and glossy; it was very tender, and he experienced remitting pains in the part, of a pricking and shooting character. He had five decayed teeth in front of the upper jaw, and had lost all his other teeth long before. The vision of the right eye was unimpaired. In his right nostril was an ordinary mucous polypus, which had existed for some years; this I removed. He knew not how to account for his malady. None of his relations ever had cancer, but there appeared to be a tuberculous tendency in the family. He had lost flesh; his appetite had forsaken him; his complexion was dull and earthy.

The further progress of the case may be told in a few words. The tumour increased, but never reached any considerable size, nor gave him much pain. The right eye was attacked by a chronic inflammation, and was slightly protruded; and he at last became nearly blind of this eye. He lost his sense of taste; "everything tasted alike to him." The nostril bled occasionally, often to a degree sufficient to require medical attention. His sense of smell, too, became impaired. But it was in his general health that the most marked changes occurred. He wasted to a "living skeleton," sinking with it to a degree of debility not often witnessed. He died the latter end of February 1855, about eight months from the first commencement of his disease.

Post-mortem Examination.—Brain.—Normal. *Antrum.*—Filled with a growth which reached to the very bottom of that cavity, and had completely destroyed its anterior wall and the floor of the orbit. The tumour was of the medullary species; the cut surface was firm, yellowish white, not hemorrhagic. On pressing it, a good deal of thick, white, turbid juice, exuded in small drops. I found this growth composed exclusively of cancer-cells—without exception, the most perfect specimens I have ever seen. Some were circular; others lengthened out; others again of an extreme length, and narrowed. A great many contained two or more, often a large number, of nucleolated nuclei—excellent examples of endogenous cell-formation. Exudation corpuscles and fat globules were also abundant. *Lungs.*—Upper halves of both firmly consolidated by quantities of crude yellowish-gray tubercles. A few small vomicæ. No cancerous deposits. The microscopic characters of the tuberculous matter

[1] Die Combinationsverhältnisse des Krebses und der Tuberculose, von Dr. Carl Martius. Erlangen: 1853.

were well marked. *Heart.*—Some indurations at the edge of the mitral valve, and in the line of attachment of one of the segments of the aortic valve. Bicuspid and pulmonary valves normal. No hypertrophy nor dilatation; muscular substance firm. *Liver.*—Portal system congested. Contained a small earthy nodule. *Kidneys.*—Left one of a deep venous hue, with a small cyst in its substance. Right one healthy. *Spleen.*—Normal. *Intestines.*—Not opened; much narrowed in caliber.

Another fact worthy of attention is the different susceptibilities different organs have for the development of the two morbid states. Thus primitive cancer of the lungs is very rare, primitive tuberculosis of the lungs very common; primitive cancer of the liver is not uncommon, primitive tuberculosis of the liver is rare. And these facts may be multiplied for several other organs.

I have long been struck, when listening to the melancholy tales of cancerous patients, how often one hears that some of their relatives have died of consumption. Is there any connection between the two diseases? Are they in any way, as it were, *vicarious* to one another? If they were, the great rarity of their both occurring *together* would be at once explained. However, the materials for answering those questions are as yet too scanty and vague to allow of any positive conclusions. All I will say is, that, of 51 cancerous patients who have fallen under my own observation, I find that no fewer than 14 (upwards of a fourth) knew of a parent, a brother, or a sister, having died of phthisis.—*Association Medical Journal*, Oct. 4th, 1856.

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21. *Lupoid Cancer.*—Mr. Zachariah Lawrence read before the North London Medical Society (Nov. 12th, 1856), a paper on this disease.

He first narrated the details of four cases of the disease—a disease of the skin, which, he believed, had not hitherto been described by any author; and then proceeded to direct attention to the following specialities:—

1. *The Character of the Ulcer.*—The most marked feature is its peculiar mammillated or tuberculated surface. It does not extend to any depth; its secretion is thin; in some cases it is painless, in others attended with occasional shooting pains; it has sometimes a tendency to bleed. It is stamped by an excessive indolence. In the cases adduced the disease showed little tendency to spread; it was characterized, not by any rapid progress, but having once attained a certain degree of severity, by an obstinate resistance against any remedies employed for its amelioration.

2. *The Situation of the Ulcer.*—The nose, upper lip, palate, and cheek were the localities observed.

3. *The Subjects of the Disease.*—Mr. Laurence had only observed it in young women in whom the menstrual function was at fault. "Lupoid ulcer" is most nearly related to Lupus exedens, but differs from that disease by the ulcer not being preceded by the formation of any tubercles, by the peculiar and characteristic appearance of the ulcer, by the smooth (not barred) consequent cicatrix, by its greater indolence, and by the special circumstances under which it occurs.

Two authors have cursorily noticed this disease. Rayer has, at plate xii. fig. 2 of his *Atlas*, figured it with the description, "Lupus exedens: ulcers of the alæ and extremity of the nose, covered with fungous mammillæ, situate under the crusts." The peculiarity of the disease evidently struck Rayer, or he would not have otherwise specially figured and specially described it. Dr. Robert Willis states, under the head of Lupus exedens, that "when the disease shows itself in the nose, it is not always possible to say positively that the first step in the development is the formation of any kind of tubercle."

Mr. Norman said he had seen several cases of the disease in question; one on the nates. He considered the peculiar mammillated appearance owing to the disease commencing in the sebaceous follicles.

Dr. Garrod had seen such cases under the care of the late Dr. Anthony Todd Thompson.

Dr. Tunaley mentioned a case of the kind, in which there was vicarious menstruation from the surface of the ulcer.

Dr. Hare believed the disease to be a variety of Lupus exedens.—*Lancet*, Nov. 29, 1856.

22. *Pathological Anatomy of Cicatrices.* By Dr. F. Hutin.—In this prize essay, the subject of the reunion of divided parts is pursued in detail through the various tissues, but the only portion we deem it desirable to lay before our readers is that treating of the *Pathological Affections of Cicatrices*, a subject which the author's position, as surgeon to the *Invalides*, has given him ample opportunity of studying.

In general, small cicatrices are not painful, although they are sometimes the seat of pruritus, and a troublesome sense of dryness, for which no causes can be assigned beyond the absence of local transpiration, and the imperfection of their structure. The subjects of large and deep-seated cicatrices, however, are very liable to severe pains proceeding from the inodular texture itself, or from the neighbouring tissues, and produced by the changed relations of parts, new adhesions, injury to nerves, &c. Severe lancinating pains seem to be due to certain filaments of nerves which run contiguous to the inodular substance, or terminating with more or less swelling near its circumference. The pains are always aggravated in wet and stormy weather, and the patients complain of a sensation as if the cicatrices were tense or swollen; but the most careful measurement detects no difference. These sensations disappear if we cover the cicatrix with wadding or other warm substance, while they persist if we cover the surrounding parts and leave the cicatrix exposed. When adherent cicatrices are situated over very movable parts, the movements induce tractions that are very painful; and if there be osseous inequalities beneath, ulceration or laceration of the cicatrix may occur.

Cicatrices may easily become the seat of inflammation, and an erythema may readily pass into ulceration; while, if the inflammation be severe, gangrene may result. After a certain period, only rare capillary vessels ramify through the inodular tissue, the vessels which traversed it at the time of its formation having become converted into fibrous cords, so that the finest injection does not penetrate. This operates as some protection against inflammation. We find varicose veins ramifying in extensive cicatrices, although, for the most part, they are seated beneath the cicatricial tissue, through which they are visible. Œdema sometimes raises cicatrices as it does the rest of the skin, although less easily when there are adhesions. Ecchymosis is also met with, but rarely without excoriation. Cicatrices may be the seat of hypertrophy, and M. Hutin gives an account of the dissection of one, resulting from an abscess in the thigh, which had been submitted to pressure during the occupation of a shoemaker. It was a simple hypertrophy, in which the surrounding skin did not participate, the cicatrix being triple its proper thickness, projecting a centimètre above the level of the skin. Hypertrophy of the neighbouring skin, as in elephantiasis, may sometimes extend to the cicatrices, but in other instances does not do so.

Sometimes cicatrices become covered with small conical or nipple-like elevations, which in consistence and colour much resemble corns, and, in certain cases, large, hard, and lamellated, present some analogy to horns of the skin. They are, however, but the result of dirtiness and prolonged pressure, occurring especially in cicatrices possessed of depressions and furrows, in which epidermis, dust, and other bodies accumulate and become adherent to the skin through the agency of its transpiration. The projections are not implanted in the cicatrix, but adhere to it, and fall off at various periods, from some weeks to a year. Cleanliness is the remedy. In other persons, however, really adherent eminences are seen, and are true excrescences from the cicatricial tissue, or they may arise from the surrounding normal parts. Indeed, it is very rare to meet them on the cicatrix, without any participation of the skin. Sometimes, again, cicatrices serve for the implantation of horny substances of various forms, which sometimes acquire a large size. Two examples are given by M. Hutin, in one of which the horn, of a spiral form, was ten centimètres in length; and in the other, reached a length of five centimètres, with a base of three. Usually, however, these horn-like substances are of much less size, always being hard at their free extremity, and becoming softer as they approach the point of implantation. The especial seat of those of a small size seems to be the extremity of the stump after amputation, and chiefly amputa-

tion of the thigh—the cicatrix in these cases being subjected to much and constant pressure.

The author has twice met with the *warty* affection of cicatrices described by Hawkins. In the first case, the growth was the size of a small nut, and resembled the warts observed on the fingers. The other more resembled fungus hæmatodes, and grew from a portion of the cicatrix of a large ulcer of the leg; seeming, however, more intimately united to the surrounding skin than to this. The author only made a transient examination of this growth; but he suggests that both it and the examples described by Hawkins may be varieties of cancer. The latter and other malignant diseases sometimes attack the cicatrix, and especially when this is large, and situated on the lower extremity. The most curious and rare accidental production M. Hutin has met with, was a kind of *keloid*, in the person of a soldier, who, at the age of twenty-six, received (November, 1839) many blows with a yatagan on various parts of his body, one of these striking the left ear, and another the point of the left shoulder. While reparation of the last two wounds which resulted was going on, vegetations sprang from the bottom, which were mistaken for ordinary granulations, and were kept down by nitrate of silver. In forty days the wounds were quite closed, but the vegetations, covered with epidermis, continued to make progress, and after awhile they became so large and troublesome, that M. Gimelle removed those of the shoulder in 1842. Those of the submastoidean region were removed in 1843. These excrescences were reproduced with the same activity in the new cicatrices, while nothing of the sort was observed in those of the thirteen other wounds. The excrescences still remain, although somewhat diminished in size, the result of the operations of nature, after the failure of every application. *Cysts* of various kinds not infrequently are developed on cicatrices, but they are rather formed at the expense of persistent or neighbouring sebaceous follicles, than of the inodular substance itself. In old cicatrices, especially when large, *cartilaginous and osseous deposits* may occur. Ossification is of more common appearance than is that of accidental cartilage. A cellular layer, a kind of periosteum, surrounds this bony deposit, the existence of which is only demonstrable after maceration, and its function as periosteum is problematical.

Slight and oblique *contusion* may do little mischief to a cicatrix, but when this is violent, it almost always leads to ulceration. In all cases, there is a tumefaction and thickening of the tissue, due to the effusion of fluid. The cicatrix is easily destroyed, either wholly or in part; and then the tissues which it had retracted separate again by their own elasticity and muscularity. Ulceration takes place rapidly in inodular tissue, so that the wound may speedily resume its original dimensions. The secondary reparation is much slower, and its different phases are liable to interruption by various accidents. Inflammation and rupture of cicatrices, as a general rule, are more likely to occur at an early period of their formation. This depends upon their retractility being more active, and their organization less complete; while the surrounding textures, still nearly approaching a pathological condition, are very susceptible of undergoing alterations. At a maturer stage, the cicatrix will acquire a greater power of resistance. But when it is thin, when it covers an extensive surface, and when there is much loss of substance in parts subjected to frequent or extensive motion, we occasionally find an old cicatrix giving way as a consequence of slight external violence. The wounds of cicatrices made by pointed instruments of small size are not of much importance; and thus we daily find healing without difficulty the bites made by leeches, and the punctures made by a needle or a lancet, though these may traverse the entire substance. The action of a cutting instrument, applied to a large surface, is less inoffensive, reparation then requiring more care and time. Healing by the first intention is observed every day; and certainly the excessive care some surgeons take in avoiding old cicatrices is far from being always justified. Still, as this mode of reparation is sometimes defective, it behoves the operator to avoid such cicatrices as far as possible. If suppuration occur, it is very rare that the old cicatrix is not entirely destroyed, and that especially in the case of wounds from contusion or fire-arms. The ordinary phenomena of

wounds of cicatrices are always more energetic than in the solutions of continuity of other tissues.—*B. and F. Med.-Ch. Rev.*, Oct. 1856, from *Mémoires de l'Acad. Impériale de Méd.*, tom. XIX.

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23. *Treatment of Carbuncles and Boils.*—Mr. John Higginbottom states (*Lancet*, Nov. 29, 1856) that during the first twenty years of his practice, he pursued the following mode of treatment of carbuncles: First making a free incision through the whole substance of the carbuncle, he afterwards applied a common poultice for a few days, until the surrounding inflammation had subsided, and then daily applied the resin ointment. He paid particular attention to the digestive organs, prescribing ipecacuanha emetics, aperients, simple diet, and pure air.

During the next twenty years, he pursued the same practice, with the addition of the application of the nitrate of silver, or lint imbued with it and dried, over the surface of the ulcer and surrounding inflamed skin, instead of the resin ointment, and then a poultice.

During the last six months he has been greatly interested in the effect of the treatment proposed by the late Dr. Physick, of Philadelphia, by the hydrate of potash, substituted for the knife, a practice which prevents all loss of blood, an object of great importance when the carbuncle is very large, and the patient old and weakly. This method of treatment, he says, would have been very deirable in the case of a large carbuncle, of no less than seven inches in diameter, which I had occasion to treat many years ago. The patient was a publican of great obesity, of a pale, unhealthy aspect, and could ill bear the loss of blood, and the case had been greatly neglected.

Mr. H. gives the following details of the result he has obtained by combining the plan recommended by Dr. Physick with that by the nitrate of silver.

"An old man of eighty-four years of age had a large carbuncle situated on the outer side of the left thigh; it was proceeding very rapidly, and was attended with much pain and surrounding inflammation. I first applied the nitrate of silver as in external inflammation, on and beyond the whole hardened and inflamed surface, round the carbuncle; and then the hydrate of potash freely on the sieve-like surface of the carbuncle, and over it a piece of lint; and lastly, over all, a common poultice, which should be renewed every eight hours. I prescribed a gentle aperient, and directed a plain, simple diet. The progress of the carbuncle was immediately arrested, and the inflammation and hardness had disappeared on the fourth day, the period the nitrate of silver also loses its effects on the skin. The slough separated in about a week, and the ulcer healed in about five weeks.

"The effect of the hydrate of potash in destroying the substance of the carbuncle is admirable.

"I may add, in conclusion, I have often used the hydrate of potash in diseased growths with great advantage, and, with common care in the application, it does not injure the surrounding skin; indeed, I have remarked the complete destruction of the diseased growth, leaving the surrounding skin in a healthy state.

"The difference of the effects of the nitrate of silver and of the hydrate of potash is very manifest in the case of carbuncle, the former being a *preservative*, the latter a *destructive* agent. This distinction being all important.

"In the incipient state of both boils and carbuncles, before the skin is broken, the application of the nitrate of silver, applied as in external inflammation, will often arrest their progress.

"During long experience *I have never prescribed alcoholic stimulants*, and I have not seen a fatal cases of carbuncle. I have found it much better and safer to pursue the plan of inducing a healthy state of the digestive organs. Where a tonic is required, quinine, with compound infusion of orange-peel and dilute sulphuric acid, is the best."

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24. *Forms of Local Injuries justifying the Amputation of a Limb.*—Mr. F. C. Skey, the eminent surgeon of St. Bartholomew's Hospital, offers (*Lancet*, Oct. 11th, 1856) the following interesting practical remarks relative to the question

of amputation of limbs for local injuries. "This is," he remarks, "perhaps, the greatest of all questions, for it involves serious and permanent mutilation of the body; and, of all subjects of operative surgery, it is that which demands the most deliberate judgment, the highest standard of professional morality, and the broadest and soundest views of the vital forces of the body.

"I am persuaded that in proportion as we study disease, and make ourselves familiar with the curative resources of Nature, the greater will be our faith in her power of reparation, and in her desire to exercise it.

"If we compare the present with the past, it will not be denied that the conservative principle has gone forth. Injuries that formerly condemned a limb to immediate amputation are now found to be amenable to treatment. Can we suppose ourselves to have reached the goal of perfection in our judgment? Is there nothing left for us to learn? Take the hospitals of the metropolis. Is the knife resorted to in an equal proportion of cases, in all? How stands this question in the provinces? Within four years of the present date, a provincial hospital containing less than one-fifth of the number of patients who sleep every night in St. Bartholomew's, recorded a larger number of amputations within one year than were performed within the same period in the great metropolitan hospital; and when to this description is added the fact, that the hospital in question is situated in a strictly rural, and not in a manufacturing district of England, I may well ask, Where is the standard of surgery by which we are guided in the amputation of limbs? In truth, there exists no standard; and the consequence is, that the limb which is preserved in one hospital or in one locality, is amputated in another. Now, this is a grievance which may be fairly urged against the surgical profession by that large community for whose benefit we profess to have ascertained and adopted the most eligible means of curing diseases and of relieving the consequences of local injuries. It is doubtless a question of difficulty, which can only obtain a solution through the medium of experience. But the means of obtaining this experience are denied to the individual, and can only be obtained in the aggregate. And hence the inconsistency of professional practice, the cause of which forms a very legitimate subject for examination and inquiry.

"It would appear to arise from various causes operating upon the mind, and hence determining the conduct of the operator: The first, and perhaps the most impressive in its influence, consists in the different degree of reliance placed by different surgeons on the power and resources of Nature in the cure of diseases. Men adopt different views of the power of the curative art. With some it holds the relation of a *vicegerent;* with others, of a *handmaid.* Our minds are not universally impressed by the conviction, that Nature cures diseases, and not we; and that the province of the surgeon, beyond which he cannot step one foot, consists in removing obstacles in her path. If this wholesome fact were impressed more deeply on the professional mind, would it not instinctively lead to a closer observation, and of necessity to a higher appreciation of her powers? At a period as late as half a century back, amputations were at least three times more frequent than at present? Why are they now less frequent? Not because severe injuries are wanting, or that diseases have proved universally tractable, but because by the study of physiology we have become, comparatively speaking, familiar with the power which Nature wields, and by the observation of the greater resources of the body than were known to our grandfathers.

"Secondly, because I do honestly believe there to exist a higher tone of feeling in the professional mind, a higher appreciation of the value of human life, and a truer sympathy with human suffering. I believe also, that a very general observance will corroborate my own impression, that, as a rule, the greater the experience of the surgeon, the fewer the operations, and, as a necessary inference, his greater reliance upon Nature. I am quite convinced, that these powers have yet to be fully ascertained; and, when tested by the few, they will eventually be acknowledged by the many. This progress of medical opinion is elaborate and slow, but it is not the less sure.

"Thirdly, because we have identified our opinions with what I believe to be most erroneous views propounded by our forefathers on the subject of what were

termed secondary operations. The theory of this almost universal law of surgical practice is this: that it is better for the constitution to bear one shock than two; and no reflecting man will deny it. It therefore resolves itself into the necessity of an immediate decision—'Now or never.' 'Now' saves life, but at the expense of a limb; 'Never' risks life, and it is our first duty to preserve it. But this well-sounding theory, although it proclaims truth in the abstract, does not proclaim truth in the application. It is true to the letter not to the spirit. The exceptions to its application are infinite; strictly speaking, it only applies in full force to cases of extreme injury, such as large contusions, crushings, or lacerations of the limbs, recovery from which is beyond hope or appeal. Consequent on such destruction, the constitution must necessarily sink; and the earlier the amputation, the more probable the recovery, because collapse of the vital powers is the certain issue, and reaction is impossible.

"And here let me ask a question not inapposite to the purpose—After what period of time from that of the injury may an operation be undertaken which brings it within the category of the law? At the expiration of how many hours is a primary converted into a secondary operation? By *immediate amputation* I understand the removal of a shattered limb as practised on the field of battle, when the sufferer is removed to the rear for that purpose. But if several hours elapse, do we still retain the term 'immediate amputation?' We make no distinction between an interval of one hour and a quarter of a day, on which distinction everything depends. If, then, we lose by distant absence from the case (a very frequent condition of things), the advantage of immediate amputation, is it not an additional element in favour of the treatment which appeals to Nature, and which calls upon her to put forth her powers of restoration? Mr. Abernethy used to dwell with much force upon the curative powers of the constitution in cases of compound dislocation of the foot at the ankle-joint. He related three examples of this injury, which he treated successfully after condemnation to the knife by other and eminent surgeons. Had Mr. Abernethy's experience been greater at that period of his life, he would not have made these the only exceptions to a rule that requires far larger limitation.

"Several years since, a boy was brought into St. Bartholomew's Hospital with his hand much crushed by a carding machine. The integuments were torn from the back of the hand, and the tendons exposed. The greater part of the palm was also denuded. The two first phalanges of the index and middle finger were dislocated, and the two others fractured, and all were more or less contused and blackened. The boy was aged about fourteen, and was healthy. I may say that I was somewhat urged to amputate the boy's hand. One thing was quite clear, there was no necessity for immediate amputation. I therefore ordered the limb to be put on a single splint, after I had replaced as well as I was able all the dislocated structures. At the expiration of a fortnight the integuments had all separated. Amputation was again suggested, but 'respectfully declined.' Had there been any danger to this boy's life, it had manifestly passed away. One by one the fingers came away, excepting the thumb, which was uninjured, and one joint of the index-finger. I watched the gradual though slow development of new integument, which formed perfectly over the entire hand, and he left the hospital in five months with a most useful fragment of a limb, that he has since by education rendered subservient to many important duties in life.

"In April last, a man, aged fifty-two, was brought into the hospital with dislocation of the left arm at the shoulder-joint, and extensive laceration of the integuments over the lower half of the forearm. The styloid process of the ulna was also knocked off. Three hours elapsed before I saw him. The character of the injury and the general aspect of the limb were such, as I thought, would justify amputation, upon other reasoning than such as influence my mind in the treatment of this and similar injuries. The arm had been reduced by my house-surgeon, Mr. Hodgson. There was no evidence of collapse or prostration. The structures were carefully replaced and covered with cotton-wool, and the arm was laid on a well-padded splint, and I determined to watch the course of events. A first and second week elapsed without any alteration justifying amputation. I fed the man well, gave him wine and brandy, and

small but repeated doses of opium. The integuments sloughed largely on the back of the arm, but his hand was warm and healthy, and he had power of motion in his fingers. Granulations formed largely on the exposed surface. The man ate well and slept well. He had a good pulse, and no pain in the limb, and at the expiration of a month he appeared safe. The wound was now cicatrizing all around. In the fifth week he sank from some cause I could not ascertain, and died.

"Possibly this case may be cited as favourable to the doctrines of immediate amputation. Who, let me ask, would not willingly postpone the removal of a limb on a gurantee of five weeks' healthy progress?

"A boy, aged twelve, sustained a severe laceration of the right hand. The integuments on the back of the hand were torn down, and the muscles of the thumb rent asunder. Nearly the same amount of injury affected the palmar surface. I determined to postpone amputation until it became imperative. The limb was placed on a splint, and covered with cotton-wool. The boy was thoroughly well nourished, and he has recovered, retaining a serviceable limb for life.

"In all these cases, I am decidedly of opinion that amputation would have been resorted to but for my own greater reliance upon Nature than others around me, and this alone saved the two, while the third case can hardly be adduced as an exception.

"It would be well for the cause both of humanity and of science, if it were possible to draw a definite line, which should determine the confines of reparative power; but it is the very impossibility of doing so which appears in some measure to justify so wide a range in the practice of different surgeons. That there is a line, obscure to our senses though it be, will hardly be disputed by any one who has deemed the fact worthy of remark, how common is the resort to the knife in some districts compared with that of others. And the difficulty of decision is unquestionable, such is the complication of the requisite inquiry. Notwithstanding which, some approach may be attempted to a more general rule, founded on the nature and extent of the injury, than has hitherto guided the hospital surgeon in his decision, although the question of local injury will be subject to large modifications, founded on that of age, sex, the character, and condition of constitution of the affected person.

"These examples may be divided into—first, such as *require* amputation; secondly, such as *justify* amputation; and, thirdly, such as neither *require* nor *justify* amputation. One word on the definition of the term '*justify* amputation.' To justify may be not to give the reality, but the appearance only, of justice; to obtain the sanction of the world. A man may obtain the warrant of general opinion while he fails to possess his own. He may be safe from comment or criticism, while he is amenable to denunciation *in foro conscientiæ*. By the term 'justify,' I mean that warrant in favour of the removal of a limb which is obtained from the consideration of an injury placed on the confines of necessity, especially if occurring in early life, in advanced age, or in impaired constitutions.

"Of the structures entering into the composition of a limb, one and all of which are the subject of rupture or disorganization, the first importance perhaps justly attaches to the arterial system; but as universal experience teaches us that the channel of the main artery may be suddenly obliterated without danger to the vitality of the limb, so in the rupture of the main arterial trunk, evidenced by the pulseless condition of the limb below, the injury is, *per se*, no warrant for amputation. But if, superadded to the rupture of the main artery, the muscular system at the seat of injury is largely contused or ruptured, and the collateral channels for arterial as well as venous blood are involved in the injury, it is more than probable that the limb will quickly fail in nourishment, the indication of which is obtained from the loss of temperature. This loss, if complete, will become apparent in the course of an hour or two. But the loss is rarely complete, and several hours, or even a day, may be required to determine the affirmative of the mischief done, on this evidence. But it is all-important evidence, and fully justifies the postponement of the decision.

"Next in importance to arteries, and in close relation to them, stands the

nervous system; and in reference to injury to the chief nerve or nerves the same remark will almost apply. We do not amputate the leg because the sciatic nerve is rent asunder. The true principles of surgery would dictate a pause —a period for watching and observation. But as the rupture, whether of artery or nerve, is commonly a matter of uncertainty, we can only judge by consequences, and for these we should wait.

"To justify amputation, from rupture or laceration of the muscular system of a limb, the injury must be very great, because the constitution does not sustain a shock in proportion to the extent of the injured surface, supposing the integuments to remain unbroken: but if the muscles be largely torn, and the investing integuments detached, and not susceptible of entire, or nearly entire replacement, I confess such an injury would justify a doubt as to the power of Nature to restore the parts to health. I speak of very large laceration, with contusion of muscle, coupled with separation of integument and extravasation of blood.

"I do not concur with many surgeons, who deem exposure of the cavity of a joint an important element of failure. I am quite aware that it is so generally deemed, and I recall to my recollection the early part of my own professional life, when a compound dislocation of a joint alone was deemed a warrant for the amputation of a limb. But I can bear witness to many cases of recovery as regards the limb, and a few of recovery to the joint itself.

"Undue importance appears to me to be attached also to fracture into a joint, as though such fracture, in reference to the retention of a useful limb, raised a serious obstacle to recovery. That it places the joint in jeopardy I readily allow, but I do not believe that the advocate for amputation in any given case can derive from its presence an argument of great force, although I do not deny that it should always be considered an aggravation of the mischief done. The same remarks will apply to fracture of the bone, especially if comminuted, when superadded to the larger injury of rupture of the main artery, or of the main nerve, extensive rupture of muscles, or laceration and disorganization of the integuments.

"I have never yet observed much advantage to accrue to the patient from the introduction of the finger through an opening in the skin, which is employed as an explorer, and carried round in all directions, for the purpose of ascertaining the nature and extent of the injury done. I have never, myself, acquired much knowledge by this process, which could be rendered available to the service of the patient, nor have I known it to be obtained by others. To the patient himself, so far as he is entitled to an opinion, it has always appeared to be positively objectionable. To be sure, it gratifies curiosity, though at some expense of suffering.

"Finally, in all doubtful cases, I would give the benefit of the doubt to the patient, and endeavour to restore the limb. If, consequent on a large injury to the leg or thigh, upper arm or forearm, the foot or hand lose their natural warmth, amputation is the only resourse. If we find extensive laceration of muscles, with extensive separation of integument, and especially if the integument be disorganized and insusceptible of replacement, I fear we must amputate, even without waiting for the above evidence of loss of vitality in the extremity; but, in a subject moderately healthy, I do not consider that any degree of comminution of bone or laceration of muscles, unless very extensive, any fracture into a joint, or compound dislocation of a joint, can justify the abandonment of the case, so long as the structures are capable of some general replacement, and the patient can submit without suffering to the restraint necessary to his recovery."

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25. *Difference between the Mortality after Amputation for Injuries and Diseases.*—In our July No., p. 242, we gave a report of a paper communicated to the Royal Medical and Chirurgical Society, by Mr. Hussey of Oxford, containing a registry of 164 cases of amputation, which were performed in the Radcliffe Infirmary. Mr. James, Surgeon to the Devon and Exeter Hospital, has made (*Med. Times and Gaz.*, Nov. 1, 1856) some interesting remarks on an

important part of that paper, viz: "The great relative amount of mortality after amputation of the thigh for injuries, and the cause or causes thereof.

"Of this great mortality," he remarks, "there can be no question, although it singularly differs under circumstances which appear very similar. Thus, Mr. Erichsen is reported to have stated that 'he believed not a single case had proved successful either in the French or the British camp,' leading to the total abandonment of the operation. Such also appears to have been the case in the Seven Years' war, when Bilguer interdicted it in the Prussian army; nearly such was the case in Paris after the great conflict in 1830; while, on the other hand, Mr. Guthrie gives a widely different result as regards the experience of the Peninsular War,[1] and it might be supported by many others, showing that, large as the mortality undoubtedly is, and much as it would tend to deter surgeons from the operation, still it ought by no means to amount to a prohibition. These statistics are on a large scale; and certainly no limited experience, however exact, will entitle us to form a positive conclusion; but as regards civil hospitals, as far as the returns go, the same discrepancy may be observed. The results stated in the report alluded to (I believe, taken from my own tables, in part) exhibit on no less an authority than that of Mr. Erichsen, a total loss of thirty-two cases in Edinburgh, Glasgow, and St. Thomas's, out of the same number of thigh amputations; while his own experience at the London University, and Mr. Curling's at the London Hospital, appears to have been more favourable (and many others might be added); thus, then, if the experience of military practice be compared with military; of civil hospitals in large cities with those of others; a singular amount of discrepancy is observable; and to this I will now add the comparative results of two provincial hospitals very similarly situated, which the report of the Oxford affords. In that institution, of six primary amputations of the thigh, five were fatal: in the Exeter there were eight deaths out of thirteen, as stated in the tables I constructed, and which are contained in two memoirs in the 17th and 18th volumes of the *Transactions of the Provincial Medical and Surgical Association* (which tables may be briefly described as follows: 'I took three hundred consecutive cases of amputation of all the limbs, beginning from the period when I first became surgeon of that hospital. Of these, ninety-four proved to be for injuries; and of these sixty-eight were primary and early intermediate; twenty-six secondary and late intermediate. Of the former, thirteen were of the thigh, and eight died.')

"Pursuing this subject of the singular discrepancy in the results of amputation, it is well worthy of remark, that of the twelve primary leg amputations in the Oxford Infirmary, none died, while of eighteen in our own, seven died. But then an extract from the very valuable work of an able surgeon, now no more, Mr. Alcock, will offer a similar example. He says: 'In the first sixteen amputations performed for gunshot wounds, consisting of primary and secondary, including a shoulder-joint case, the majority of the thigh and leg, I lost but one (and that was an an almost hopeless case of secondary amputation of the thigh). In the next eight I lost seven.'

"However worthy of notice these discrepancies are, there can be no doubt that they will ultimately be found to resolve themselves into definite principles governed by certain laws. They are like the perturbations of the planets, which once were equally unexplained. But to return to our more immediate subject.

"*The Mortality after Amputation for Injuries, as compared with those for Disease.*—In Mr. Hussey's report of fifty-five amputations of the thigh for disease, ten were followed by death; in my own, out of one hundred and nineteen, there were ten; here, again, it is probable that, as regards the former, the mortality may, from some accidental circumstance, have been greater; in my own, less than the average; but take which table you will, there is no proportion between the general mortality after amputation for disease, and for injury, and take which you will, while the mortality after amputation for diseases, especially of some large classes of disease, is not alarmingly large, even in the

[1] He lost nine out of forty-seven of all limbs.

thigh, for that injury has justly been stated as the 'most fatal in surgery.' When the influence of concurrent diseases, as of the lungs, etc., and chance misadventures in carrying out the operation, and its subsequent treatment, are duly considered, the actual mortality for disease is not large *per se*, as in the memoirs I have alluded to, I have endeavoured to show; but this being the case, then comes the question, On what does the great amount of mortality after amputation for injuries depend? My answer is, Not on the amputation, but on the injury.

"Mr. Hunter's axiom—that it arises from the condition of health not bearing disease well—I have before combated, and there is little reason to believe it will be insisted upon, but in lieu thereof other hypotheses have been advanced, which, when duly inquired into, will, I believe, be found extremely doubtful, to say the least; in the discussion, however, to which I now refer, the phenomena thus explained occupy a prominent place. The extraordinary mortality in cases of amputation of the thigh, then, has been of late years attributed to the bone itself; to inflammation of its medullary membranes; still more to inflammation originating in the veins. At first sight there may appear grounds for these opinions, which are advocated by men of high ability, but when it is considered that in the parallel example of the arm, also in the leg and forearm, the mortality after amputation for injuries is comparatively small, the value of these hypotheses will considerably decrease; still more, when the comparative results of amputation for injury and disease are well considered with relation to the thigh itself, and with reference to this I will content myself with quoting the following passage from my second memoir: 'Very high authorities attribute this (mortality) in a great degree to a cause which, at first sight, appears to offer a ready solution, namely, that the veins within the bone are mechanically prevented from closing, as in the soft parts, and are, therefore, prone to inflammation. The facts now stated will show that, however this may be, it cannot be the real cause; for precisely the same conditions, as to the bony structure, obtain in amputations for disease, where such consequences rarely ensue, as in those for injury, in which secondary inflammation is so common; and in those for injury I may observe, that they occur in a very small proportion when the amputation is of an upper extremity, the condition remaining the same. That inflammation of veins often takes place after amputation for injury, and that secondary inflammations in other tissues also occur, is a fact, and that these, whenever they take place, are capable of exciting an additional, and often fatal, effect, is quite certain; but, it may be demanded, if veins inflame in the one case, why should they not equally in the other, if the amputation is performed through sound and healthy parts in a healthy person (primary amputation)? why should the veins inflame when the cause is an injury, so much more frequently than in the unhealthy, where it is disease?' (The bone is equally sawed through in one case as in the other, and above the injured portion.) Of this remarkable fact no explanation has ever been offered.

"If then I am justified in supposing that these hypotheses are insufficient to explain the phenomena, I may be warranted in again proposing that which I advanced in the memoirs alluded to. It is this. That the lesions which require amputation (in primary cases) are, for the most part, produced by causes which extensively crush or lacerate the part. That in those which require the amputation of the thigh, a very considerable portion of the body is involved. That the condition of the nerves in any part so crushed or torn, is very similar to that of a portion of the spinal cord as experimented upon by Le Gallois and Wilson Philip half a century since. That the effects on the system in either case constitute what we call shock. That whether the injured part is severed by amputation or not, death often ensues, as is well known, as also that if an operation is superadded at an improper period, either too soon or too late, additional injury is inflicted; but if sufficiently soon, or sufficiently late, much benefit often accrues. That, whether the part is severed or not, a train of symptoms arises from the lesion which required it. That these symptoms are very probably the consequences of changes wrought in the blood by the injury, as stated, through the agency of the nervous system, and is, so to say, more or less disorganized thereby; the effect being not very dis-

similar from that produced by the introduction of morbid poisons. That this state of the blood (not excluding that of the nervous system) is incapable, while it continues, of supporting the processes of healthy inflammation, and hence the tendency to gangrenous inflammation and phlebitis in the stump, and the diffuse inflammations, pyæmia, and pus deposits, in the system. That the powers of nature are capable, in many cases, of redeeming this state of the blood, either when amputation has been performed or not, and if not, when so redeemed amputation may very frequently be performed with success (true secondary).

"Another question arises, *i. e.*, whether this hypothesis is supported or contradicted by any other results of amputation for disease. I have already pointed out the great difference between the general results as regards the relative amount of mortality in amputation for disease or injury, but a very remarkable fact disclosed itself in my investigation of the histories of amputation for disease, as regards these especially. To render the investigation methodical, I had distributed them into classes, according to the disease for which they were performed, a plan which has not heretofore been attempted, but which is so consistent with reason, that I hope it will be. In the memoir alluded to, I divided them into two groups. The 1st, diseased joints, necrosis and caries, sphacelus senilis (chronic gangrene), malignant diseases (tumours not ulcerated), and useless limbs. These comprised one hundred and seventy-two cases of all kinds, with only eight deaths.

"In the second group, old ulcers, whether malignant or not, acute sphacelus, and acute suppurative inflammation (thecal, etc.), in all thirty-two cases, there were nine deaths. The amount of mortality in this group is, as regards the *lower extremities*, fully equal to that of amputation for injury, which, out of fifty-one cases, gave twenty-one deaths; while this, out of twenty-five cases, gave nine. And if we investigate the probable cause of this (setting aside the question of age, which must have its due weight as regards the amputation for ulcers), we shall find that the condition of the blood may be regarded as in a state very similar to that which I have supposed to be induced by injuries, *i. e.*, if not absolutely pyæmic, at all events readily disposed to be so. And consequently, the facts would tend to support the opinion I have advanced as regards amputation for injuries; at all events, not militate against them.

"To the scheme of the *Analysis* of Amputations for Disease, I may also solicit the attention of surgeons; for, if more extended inquiry shall confirm the preceding views, it is evident they will have an important practical bearing on the plans adopted. I may further be permitted to add, that when the small amount of mortality ensuing upon amputation of the limbs for diseases of joints is compared with that which has followed their excision, it may not improbably be found that the advantages gained by the latter operation do not sufficiently compensate for the risk incurred."

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26. *Cases of Compound Fracture of the thigh; Primary and Secondary Amputation.*—By Augustin Prichard, Surgeon to the Bristol Royal Infirmary. The subject of compound fracture, and of primary and secondary amputation of the thigh, has been occasionally brought before the profession within the last few months, in the interesting records published by some of the able surgeons who have had opportunities of witnessing these accidents on a large scale in the late war. The want of success of primary amputation of the thigh, among both French and English, has been most discouraging. Writers on military surgery say most justly that the condition of the patient is generally unfavourable, and that the nature of the injury is so different from that which goes by the same name in civil surgery, that no comparison can be fairly made with reference to the results of treatment. It is obvious, without any argument, that the shattering of a thigh bone by a rifle-ball, which completely perforates the limb, must be a very different and more severe degree of injury than that produced by a fall, when the fractured extremity of the bone is thrust through the integuments. This would fully account for any want of success in treating these cases, by trying to preserve the limbs; but we must look for more general causes to account for the excessive fatality accompanying primary

amputation of compound fractured thigh from gun-shot injuries. These are probably to be found in the surrounding circumstances, rather than in the state of the limb or in the condition of the patient himself; for in any case where primary amputation of the thigh is considered essential for the preservation of life, the injury and the shock must necessarily be very great, if not in regular and exact proportion to one another.

I publish the following series of cases, including all that have been under my own care for the last four or five years, to confirm the views of the military surgeons as to the differences in the effects of injury, and as a testimony that there are many cases which recover. Compound fracture of the thigh is not a very frequent accident, compared to many others which we see in hospital practice.

In this list of seven cases, two were treated without operation; three by primary, and two by secondary amputation; and all recovered.

Case I. *Compound Fractured Thigh; Treatment by Long Splint.*—Thos. Abbott, a rivet carrier, aged 13 years, was admitted under my care on the 11th of September, 1855, He had been struck down by a swing, which passed over him, striking back his legs, and fracturing the right thigh in the upper third. On admission, a wound was found over the position of the femoral vessels, from which projected the lower portion of the thigh bone, broken transversely. A considerable piece of his shirt had been carried into the wound by the upper fragment, which occupied the deepest (or most posterior) part of the cavity. Upon making extension, and at the same time applying pressure to the protruding bone, it suddenly slipped back, and the upper fragment started up like a spring, and almost projected at the wound. He was treated with simple dressing and the long splint, and recovered without any suppuration or serious evil. He was discharged cured on the 10th of November, with his thigh bone united.

His cure thus occupied sixty days; the unusual shortness of which period was due to his youth and good health.

Case. II *Compound Fractured Thigh; Treatment by Long Splint.*—Thomas Chinn, aged 29 years, a short and stout man, not leading the most temperate life, was struck down and injured by a cart, and was brought to the Infirmary on the 6th of March, 1856. He was found to have an oblique fracture of the middle of the right thigh bone, with a small roundish hole on the outer side, caused by the pointed extremity of one of the fragments.

This patient was treated with the long splint and simple dressing, and was kept under the influence of opium for some time. The wound closed, and appeared to heal in a great measure by the first intention. He took a grain of opium every six hours for about ten days, when it was necessary to give him some gentle aperient, as there had been no action of the bowels. In six weeks after his admission, he was placed in starch and pasteboard bandages; and after some time went out with fair union.

I saw him about three months and a half after the accident; the union of the bone was complete, his thigh was strong, but he was extremely lame, for the leg was about an inch shorter than the other, and the knee very stiff—a common consequence of long confinement in the extended position. He was compelled to help himself with his crutch, and complained, not of the thigh at the fractured part, but of the knee.

The extension of the ligaments of the knee-joint, which is almost inevitably connected with the treatment of fractured thigh (both simple or compound) by the long splint, is undoubtedly a great evil. The long continued extension which is necessary, causes the ligaments to yield a little; and when the splint is removed, a limb, which will ultimately be of the same length as the sound one, appears a little longer; and by moving the leg laterally, whilst the other hand steadies the thigh, we can feel the upper surface of the tibia striking alternately against the condyles of the femur—a thing impossible in the ordinary condition of the joint. At the Bristol Royal Infirmary, our cases of simple fracture of the thigh are always treated in this way—viz., the long splint and the pelvic strap—and invariably do well. The looseness of the knee gradually disappears.

Case. III. *Compound Fractured Thigh; Primary Amputation.*—George Rogers, aged 11 years, was admitted on the evening of the 9th of September, 1853, with compound fracture of the left thigh. He caught his leg between the spokes of a wheel, as he was sitting up behind a carriage; the thigh bone was separated at the epiphysis; the upper fragment protruded for three or four inches, and the skin of the leg was very much lacerated. I amputated his thigh about the middle, by double flaps, under chloroform. He was extremely depressed during the operation, but subsequently revived. His thigh was very muscular for a child, and several vessels required ligature. I brought the edges together in my usual way, *i. e.*, with German silver pins[1] (twisted suture), and a few strips of adhesive and bandage.

Sept. 10. He was very faint during the night, and a good deal of brandy was given. The sutures were all taken out on the fourth day. There was afterwards considerable suppuration within, but it subsided, and he went out shortly with an excellent stump.

Case. IV. *Compound Fracture; Primary Amputation.*—Robert Jones, aged 7 years, was admitted in the morning of the 23d of August, 1854, with his knee crushed by the wheel of a cart. The bone was separated at the epiphysis and crushed, and two inches of it protruded through a lacerated opening in the soft parts. There had been free hemorrhage from the wound for some time.

At noon I removed the thigh by double flap, involving a part of the wound in the incision, and performing the operation as rapidly as possible, to prevent further loss of blood. His pulse was barely perceptible. I tied the arteries, and also the femoral vein, which was disposed to bleed, fearing the effect of any more bleeding. The stump was dressed as usual. When he was carried back to bed, he was cold and pulseless, looking white and waxy, as if he had been drained of all his red blood. Four hours after the operation, his pulse was occasionally perceptible, and he had been vomiting, and had thrown up the brandy that had been given. In the evening, the external application of heat, which was made immediately after the operation, had produced some general warmth; and his pulse was steadier.

Aug. 24. Skin hot; pulse 152. He is barely sensible, and does not seem to know that his leg has been cut off, although chloroform was not given at the operation. He was ordered to have eight drops of laudanum.

On the sixth day after the operation, the stump was dressed entirely, and but little union by the first intention had taken place. There was subsequently some tendency to retraction of the flaps; but, by careful bandaging from above downwards, the bone was well covered. He was many weeks rallying from his loss of blood, but he ultimately recovered with a good stump, and became fat and strong.

Case V. *Compound Fracture; Primary Amputation.*—William Piddiford, aged 16 years, was admitted in the evening of the 11th of September, 1855 (the same day as Case I.), with a compound fracture of the right thigh, from a direct blow. The "cage" in a coalpit fell, and struck him on the front of the thigh, above the knee. The bone was broken, and the limb bent backwards; the popliteal artery was ruptured, and a large laceration made into the upper part of the popliteal space. He lost a large quantity of blood immediately. The finger introduced through the wound discovered comminution of the femur, and about an inch and a half of the popliteal artery hanging loose in the cavity, but not bleeding.

I amputated by circular incision, as close to the injury as possible. Eight vessels were tied, and the flaps brought together by three pins and adhesive plaster. The artery was found closed by a firm plug, and contracted at the end. He went on without any bad symptoms. The last suture was removed

[1] The advantages of these over ordinary sutures in dressing stumps, are the complete apposition which is obtained, the little irritation which they produce, and the great ease with which they are removed. I have frequently allowed them to remain eight days; and am constantly in the habit of removing them without the knowledge of the patient.

on the 20th—*i. e.*, on the tenth day. Very incomplete union by the first intention occurred, and this I attribute to his loss of blood; for the friends say that he bled very largely at the mouth of the pit when he was drawn up; and he was many days rallying at all after the operation. He went out cured on the 19th of October, and soon afterwards became fat and well.

Case VI. *Compound Fractured Skull; Compound Fractured Thigh; Comminuted Fracture of the Patella; Secondary Amputation.*—William Owen, sailor, aged about 45 years, was admitted in the afternoon of the 11th of April 1853, having just fallen upon the deck from the yardarm of a vessel. There was a large wound across the forehead, bleeding freely, with fracture of the outer table of the skull into the frontal sinus, from which air and blood bubbled out. Below was a lacerated wound of the nose with fractured os nasi. He had fracture of the little finger of the right hand; a large round hole in the middle of the left thigh (anteriorly) from which blood oozed freely; transverse fracture of the femur at this point, the lower part being drawn up about two inches behind the other fragment; and, in addition to all this, there was comminuted fracture of the left patella. The thigh was full of effused blood and coagula. There was great ecchymosis of the lids of both eyes.

Four sutures were inserted in the skin of the forehead, and cold lotion was applied. A wet pad was applied to the wound of the thigh, the long splint, and a bandage over the patella. In the evening, the knee-joint had become full of fluid, and it was necessary to cut the bandages. A ligature was tied upon the frontal artery, which had begun to bleed upon the establishment of reaction. He could not open his eyes.

April 12. He is sensible, and complains of the thigh, which is very tense.

15*th*. He goes on well; sweats very much; pulse quiet. He was directed to have a pint of strong beer daily. He went on in the same way, gradually improving, until the 2d of May, when extensive suppuration in the thigh came on, and his health began to suffer.

May 17. Much worse; is unable to bear any pressure or extension; great collection of fetid pus and discharge from the thigh. I placed him under chloroform, and made a free incision on the outer side of the limb, and turned out the coagula. Finding the upper part of the femur rough at the extremity, and not at all in contact with the lower part, I turned it out, and sawed off the end, placed the parts in apposition as well as possible, and put the limb up again with the interrupted long splint, leaving a free aperture at the side for the escape of pus.

30*th*. He appeared to be sinking from the discharge, which still collected, although I enlarged the lateral wound. As the case was getting from "very bad" to "still worse," I put him under chloroform again, passed my finger through the original wound in the front of the thigh, and made a large and free counter opening at the back of the limb, and introduced two strips of bandage completely through, to keep the opening clear. The surface of bone whence I had removed a portion a fortnight ago, was covered with granulations, showing considerable reparative power in his constitution, and confirming my idea that I was not running too great a risk of his life in thus trying to save the limb. After this operation he mended for a time, and careful extension was kept up with the hope of union. None, however, took place, and the discharge again became profuse. He drank nearly a bottle of wine a day for two or three months, at the end of which time two necrosed portions of femur came away, without altering his general state. The chance of saving the limb was now lost.

Oct. 6. I amputated the thigh, under chloroform. The limb was in the following condition. The upper part of the femur projected through a wound on the thigh, the lower part was at the back and much retracted; there was a considerable collection of matter in the tissues. I made a circular incision above the knee, drew out the lower part, and, making a straight longitudinal cut from the incision into the old wound, I turned out the upper end, and sawed it off. There was considerable hemorrhage from the surface, but it was eventually subdued. The stump was dressed lightly, the patient treated by opiates and stimulants (for many years our method adopted of treating opera-

tion cases, unless there is some good contraindication), and there was considerable union by the first intention. After a time, however, the bone appeared through the longitudinal cut above described, and he suffered greatly from profuse sweating and copious suppuration. It was soon obvious that the end of the thigh bone had not withstood the action of the saw, and was dead. In about six weeks the portion exfoliated; ultimately the stump healed entirely, and the patient went out, after so many months of danger and suffering, walking firmly on his wooden leg.

Case VII. *Compound Fractured Thigh; Secondary Amputation.*—William Farmenter, aged 18 (one of three at a birth, one other of whom survives), was admitted in February 1855, for a compound fracture of the left thigh, a door having fallen upon him. The upper fragment pierced the integuments at the outer side of the thigh. He was treated with the long splint and dressing, but there was no apposition of parts, and pus collected and discharged in large quantities. The upper part of the bone projected forwards, and there was a sharp prominence behind, pressing against the bed, as if the lower portion had been dragged upwards and backwards, and had almost perforated the skin. His health began to fail rapidly.

I amputated his thigh on Sunday the 22d April by circular incision, under chloroform. A large quantity of pus followed the second cut, and after the bone was exposed, I used a scalpel, and the lower part of the limb was drawn out, leaving a long cavity above. I tied the femoral and other vessels, but there was free hemorrhage from the large granulating cavity which had been exposed, and to stop the bleeding, I was compelled to lay open the cavity by an incision below. Turpentine had the effect of stanching the blood. The femoral vein and an arterial twig from the profunda lying behind it were tied *en masse*, as the lad was very faint. In the evening his pulse was just perceptible and he had been very sick, and this continued until the middle of the following day, when I ordered him a pill composed of a drop of creasote and a grain of opium, from which time he was not sick. He takes six ounces of port wine daily. By the 1st of May the upper and anterior part of the stump had healed, and the lower part discharged healthy pus. He soon began to gain flesh and a healthy colour, and he left the Infirmary in the middle of May, with a small wound still remaining at the lower part of the stump where I had made the longitudinal cut; and he is now (August, 1856) quite well.

The termination of all these cases was most satisfactory; and this is undoubtedly due to their youth, good health, and the great care they received in the airy wards of our Infirmary, and also to the liberal support they had in the way of nourishment and stimulus. I can hardly venture to hope that my next seven cases will be equally successful.—*Assoc. Med. Journ.*, Sept. 6, 1856.

27. *Excisions of Joints.*—Surgeon Thornton, of the 9th Regiment, read at the meeting of the Crimean Medical and Surgical Society, March 20, a paper on excisions, a subject, he said, of deep importance to us all, not only from the extent to which the principles of conservative surgery have been carried during the war, and the benefits that this class of operation has conferred on mankind, but also from the success that has generally attended our efforts in these cases, which must be a source of sincere gratification to ourselves, both individually and as a body, and tend to reflect credit on British military surgery. He would now read a few cases, bearing on the subject of excisions, that had occurred in his own practice, and some that had been kindly supplied to him by others. He did so, in the hope that the other members would also tell what success had attended their efforts, and gain, if possible, some more adherents to the cause of conservative surgery. He trusted they would excuse his appending any lengthened remarks to the cases, as it was not so much to give his own as to hear the opinions of others, that he came before them, and to promote the objects of the Society, by introducing a subject of discussion that is so interesting to us all; as we may any day, whether in peace or in war, be called on to prove our practice, and we ought to be able to do so with benefit to those intrusted to our care. He expected from the discussion that would take place, that we should carry away with us the sound, practical experience of many

whom he saw present, and who had had more opportunities than himself of developing this branch of the profession, and prove to all that this Society (in the success of which we feel deeply interested) was a real benefit, not only to ourselves, but also to those committed to our charge, affording, as it did, an opportunity for promulgating our views, and thus tending, by the accumulation of facts, to the production of an improved practice. Those who had heard the discussions on the various subjects that have already been brought before this Society, must have been struck by the sound, practical views that have been expressed, and the observations made on the influence that climate has over disease, founded on the experience of our members during their residence in various parts of the world; for there are few portions of the globe where we shall not find that some one amongst us has been.

The first case he would bring before their notice, was one of excision of the shoulder-joint of private T—— R——, 9th Regiment, aged 25 years, who was wounded on the 4th of July, 1855, whilst in the trenches before Sebastopol (left attack), by a shell which wounded five men; a large splinter of the shell struck him on the left shoulder, fracturing in its course the acromion, coracoid, and a large portion of the spinous process of the scapula; it also fractured the neck and glenoid articulation of the left scapula, breaking them into small pieces; the humerus was fractured in a longitudinal direction for about three inches from its head, through the head, the fracture being also comminuted—there was some slight venous hemorrhage. On the following morning, having determined on excising the fractured portions of bone, chloroform was administered. He then, Dr. Taylor kindly assisting him, passed the catlin through the wound, and, with one sweep of the knife, laid the wound open behind, from the shoulder to the axilla, then dissected out the fractured end of the humerus and sawed off the jagged end of the lower portion. The upper fragments were then removed, and the head of the humerus disarticulated, and all loose portions of the scapula removed: the edges of this extensive wound were brought together, and retained by sutures; there was only a slight oozing of blood from the divided muscles; no ligatures were required. On the 8th of July, the wound appeared to be healing very favourably, and his general health continued good. On the 9th, an erysipelatous blush appeared round the shoulder, but the wound was discharged healthily. His strength was supported by wine, porter, etc., and a simple dressing of lint, wetted with a weak solution of chloride of sodium, applied in order to remove smell, and keep off the flies, which were a perfect plague in our hospitals at this season. On the 10th, the erysipelatous blush extended round the wound. The sutures were removed, and a linseed meal and charcoal poultice applied; however, gangrene set in, he sank rapidly, and died the following morning. It is of importance to remark, with reference to this case, that, on the night of the 8th of July, a regular sirocco set in, which continued for three days; with its advent, all the wounds then in hospital took on an unhealthy character, and although no other casualty took place, it tended materially to delay the recovery of the other patients. The question may, perhaps, arise: Was this a case in which conservative surgery was advisable, and whether it might not have been better to have removed the limb from the shoulder-joint? He must state that he was still of opinion that the best course was pursued under the circumstances, for there was this very important fact in favour of its success, that the vessels and nerves had escaped intact, and that there was a fair reason to hope that the reparative efforts of nature would be successful. The unsuccessful termination of the case he considered as owing to the peculiar climative cause already referred to, producing unhealthy action in a very extensive wound.

The next case was one of excision of the internal condyle of the humerus:—

Private T. B., 9th Regiment, aged 30 years, was wounded, on the 8th of September, 1855, by a musket-ball in the left elbow, which fractured the internal condyle of the humerus, and also wounded the joint; he at the same time received a severe bruise on the left hip from a splinter of a shell. The bullet and some small pieces of bone had been extracted in the trenches, and on examination some time after, at the hospital, Mr. Thornton decided on saving the limb, supporting it on a splint, dressing the wound with lint, and kept moist with

cold water. On the 10th, severe inflammation of the joint set in, with much swelling, and considerable constitutional disturbance. On the 11th, the fourth day, the febrile symptoms were less, but swelling and pain had much increased, while the skin round the wound had a mottled appearance, as if threatening gangrene. Chloroform having been administered, Mr. Thornton made a free incision in line with the humerus down to the bone, at the same time laying open the joint, and exposing the fracture. He then removed all the broken portions of the internal condyle; the other portions of the joint were uninjured; there was much hemorrhage during the operation from the distended state of the vessels, but there were no ligatures required, and the ulnar nerve was untouched. The edges of the wound were then brought together, and a few sutures applied; the arm supported by an angular splint placed on the outside, and plain cold water dressing applied to the wound. The swelling, which had been so considerable previous to the operation, had all subsided ere it was completed. From this time, the limb and his general health steadily improved, and he was invalided to England, in November last, in consequence of the reduced motion of his elbow. However, the amount of motion was steadily increasing, and when he left he could extend his arm to within one-third of its natural motion. This was to Mr. Thornton a very satisfactory case, from his being enabled to save the limb, which at one time appeared to be very doubtful. He believed that the external condyle had been removed several times, but he had not heard of the internal condyle having been excised on any previous occasion, and it is the only case recorded to have taken place in the Crimea. Considering how important the internal condyle is to the integrity of the elbow-joint, Mr. Thornton was agreeably surprised to find that the motion of that joint had not been more affected by the operation. He should have been perfectly satisfied with the success of the operation, had the patient recovered with stiff joint; and he must acknowledge that it was very gratifying to watch the gradual improvement in the movements of the joint.

The third case is one of excision of the elbow-joint, performed on the 19th of June, in the General Hospital, by Mr. Wyatt, Coldstream Guards, who had kindly given me the notes of the case:—

Private J. O'B., 44th Regiment, received a comminuted wound of the right elbow in the attack on the Redan, on the 18th of June, aged 26 years, of a healthy constitution. A Minié ball had entered on the inside of the joint, between the olecranon and internal condyle, comminuting both, and dividing the ulnar nerve; it then passed through the arm about two inches above the joint; the external condyle was fractured and detached from the humerus, and the heads of the radius and ulna were also comminuted. The artery was uninjured; the internal wound was much lacerated; and the bullet, which was much compressed, lodged in the cloth of his coat on the outside of his arm. Altogether it appeared a good case for excision of the elbow-joint, which operation, with the concurrence of Drs. Taylor and Mouat, was performed by enlarging the internal wound in a semilunar direction upwards and outwards. The lower end of the humerus was then thrust backwards through the wound, and two inches of its extremity sawn off. The soft parts were then detached from the upper end of the ulna, and that bone divided just below the coronoid process. The articulating cap of the radius was also sawn off just below the tubercle, so as to preserve the attachments of the tendons of the biceps muscle, and cold water dressing applied, the arm being placed in a semiflexed position. After some days, pyæmia set in, and he died on the 25th of June.

The last case he would read, was that of excision of the hip-joint, performed by Dr. O'Leary, 68th Regiment. This, as being the only successful case, he would give the notes in full, as supplied by Dr. O'Leary.

Case of excision of the hip-joint, 68th Regiment:—

Private Thomas M'Kenna, 68th Light Infantry, aged 25, was admitted into hospital on the 19th of August, 1855, from the trenches, where he was struck by a fragment of a shell over the great trochanter of the left femur. The wound, which admitted of the introduction of the fore-finger, extended down to the bone, and at the bottom of it some scales of osseous structure, lying loose, could be felt. From the examination it was evident that the neck of the bone was frac-

tured, and, on the following day, it was decided to excise the joint. The man was placed under the influence of chloroform, and excision carried down along the shaft of the bone, which was separated from its attachments, and sawn off about an inch below the lesser trochanter. The head of the bone was, without difficulty, removed from the acetabulum. The man lost a considerable quantity of blood, although no vessel required a ligature. When the operation was completed, the edges of the wound were brought together by the interrupted suture, and a bandage applied. The leg was swung in a sling of strong canvas from a beam over his cot, the heel being considerably elevated, and the injured limb slightly abducted. This method of treatment was adopted with a view to encourage approximation of the upper end of the shaft of the bone to the acetabulum, and by pressure on the under surface and sides of the limb, to prevent the accumulation of matter among the tissues. When the injured parts were removed, it was found that the fracture extended obliquely downwards, between the trochanters and upwards, to within half an inch of the cartilage covering the head of the bone. Although the man's pulse for several weeks did not fall below 100, the functions were healthily performed, he slept well, ate with appetite, and was cheerful throughout. His diet was generous and varied, and a liberal supply of wine was allowed him. At the end of the twelfth week, he was able to leave his bed, and move about on crutches; and, on January 16, 1856, he was transferred to a ship about to proceed to England with invalids. When he left the camp the wound was firmly united, two small sinuses only existing, which admitted of the introduction of the director, and which discharged a very small quantity of thin, purulent matter. He was gradually regaining power over the limb, and was able, to a limited extent, to flex the leg upon the thigh, and the thigh upon the pelvis. Shortening to about five inches, and very slight inversion, were the chief deformities consequent upon the operation. In an injury of this nature, where so great an extent of bone required removal, and particularly of that portion which gave insertion to so many of those muscles which are chiefly employed in the abduction of the limb and in its rotation, it is scarcely to be expected that a free use of the leg can result. However, it may be hoped, that, with the use of a boot having a thick sole, and a high heel of some light substance, this man will, in the course of time, be able to move about with the support of a single stick. The apparatus employed in swinging the limb was made of strong sail-cloth, and extended from the nates to the malleoli. Its long edges were turned down into deep hems, through each of which was passed a piece of wood rounded, and of about half an inch in diameter, the extremities projecting two inches. Two pieces of pack-line, each a yard long, were attached by a loop to the ends of the rods; and to the centre of the cords was knotted another line, which passed over a beam, and was secured to the bedstead on which the man lay, to prevent lateral motion; and to preserve abduction, at a fixed angle, the lower ends of the pieces of wood were attached to the cots on either side. The use of an air-bed prevented the formation of bed-sores.

Doctor O'Leary's case speaks for itself. It may be asked why, in speaking of the success of excisions, that he brought forward two cases that terminated fatally, simply that we hear quickly enough of the successful cases, and he believed that we learn more from the unsuccessful ones. The real question at issue is, whether are excisions or amputations most fatal to human life? The tables that he would now read to the Society were decidedly in favour of the former. He found, by the return of wounds and operations during this year, that Sir John Hall was so kind as to give this Society, that, out of a total of 8,900 wounds, there were 1,154 operations, of which 54 were excisions, which may be thus classed:—

	Cases.	Fatal.	Per cent.
Excisions of the upper extremity were . . .	36	2	5.55
" " lower " " . . .	14	7	50.00
Miscellaneous	4	0	
	54	9	16.66

or 83.34 per cent. were successful.

Total operations 1,154. Deaths 225, or 19.49 per cent.

Operations less excisions, 1,100. Deaths 216, or 19.63 per cent., giving 3 per cent. in favour of excisions.

Or, to enter more minutely into the various operations, we will first take those of the shoulder-joint:—

		Per cent.	Per cent.
Amputations were	60, fatal 19,	or 31.66,	or 68.34 successful.
Excisions "	12, " 2,	" 16.66,	" 83.34 "

giving a difference in favour of excision 15.0 per cent.

The next is that of amputations of the arm, with excisions of the elbow-joint. This class, he frankly owned, was scarcely a fair test:—

		Per cent.	Per cent.
Amputations were	153, Deaths 29,	or 18.95,	successful 81.05
Excisions "	17, " 2,	" 11.76,	" 88.24

giving a difference in favour of excisions of 7.19 per cent. Perhaps the most important class is that of operations on the hip-joint; for, while the ten cases of amputations all proved fatal, there were six cases of excisions of the head of the femur, of which one recovered, being a percentage of 16.66 in favour of the excisions. It is needless, on the present occasion, to carry this analysis any further; but, taking the three classes together, we find that of 223 important amputations, 58 or 26 per cent. were fatal; and of 35 excisions, 8, or 22.85 per cent., were fatal. On the whole, that the percentage is still in favour of the excisions. It, perhaps, might be as well to mention what might have been the excisions performed out here.

Of the upper extremity, there were of the

	Cases.	Per cent.
Shoulder-joint	12 . 2	or 16.66 proved fatal.
Elbow	17 . 2	" 11.77 "
Head of Radius	1 . 0	" — "
Ends of Radius and Ulna	1 . 0	" — "
Part of Ulna	1 . 0	" — "
Part of Humerus	1 . 0	" — "
Part of Carpus and Metacarpus	2 . 1	" — "
Internal Condyle of Humerus	1 . 0	" — "
	36	

Of the lower extremity, there were of the

Head of the Femur	6	5 fatal.
Part of the Femur	2	2 "
Knee-joint	1	1 "
Os Calcis	4	0 "
Lower End of Fibula	1	— "
	14	8

Miscellaneous cases were 4, principally of the face, including one excision of the lower jaw—all successful. Mr. Thornton then gave a rapid sketch of the history of excisions, and that almost all had been performed on account of disease of the bones; and he might safely say, that it had fallen to our lot to prove, by the experience of this war, the efficiency of excisions over amputations in recent gunshot wounds of the joints; and we must allow that the results are, so far, satisfactory. Another question is, how much of the joint may we remove, or leave with safety? We certainly may deal more freely with the upper than the lower extremity. In one of the cases he had read, he removed only a portion of the elbow, whilst he had freely opened the joint, and this without the slightest after-symptoms to cause him to hesitate in doing so again, should an opportunity offer. The general results of the operations on the upper extremity are certainly satisfactory, whilst those of the lower extremity, as we might expect, have not been so happy, but are still so much so over amputations as to make us regret that they have not been oftener tried. We must all rejoice that

the last act in the grand drama that we have been engaged in, has been the establishment of this Society; and that, while the nations are laying aside the sword in peace—although we have a warfare to carry on against quackery, ignorance, and routine, perhaps in none more so than the subject before your notice. The members of this Society owe it to themselves, he would say, to proceed in the good work which has commenced so well. Let us, therefore, keep this Society not only alive, but active, and draw forth that knowledge which our discussions have already given us such good reasons for knowing that our fellow-labourers in the field of humanity possess. In conclusion he would say, remove as little of the human frame as possible, and let us enlist under the banner of conservative surgery.

Mr. McLeod believed that only one successful case of excision of the hip-joint occurred.

Mr. Blenkins said that we are all alive to the importance of this operation; and it was a most interesting subject that, whilst there was some difference of opinion as to the operation, the results were generally satisfactory. He corroborated Mr. Thornton about the effects of climate, and that there was a period when the wounds did badly; the sirocco had affected his patients, one of whom was a hip-joint case. His opinion was such as to encourage repetition of this operation. Excisions must be more frequently repeated, as how many shoulder-joints have been excised instead of amputated, and thus many a limb saved. That the sirocco should have occurred at a time when there were so many wounded in the hospitals, was unfortunate, and his own patients were seriously affected by it. He considered the weather had a great influence on the success of operations. He had excised three and a half inches of the humerus; the wound healed rapidly, and considerable consolidation had taken place. The man will have a good and useful limb. His case of hip-joint was a severe compound comminuted fracture, by shell, of both trochanters, and the neck and head and upper third of the shaft of the femur. The wound did well for three weeks, and granulated healthily. He then began to complain of the knee of the same limb, which had been injured many years previously; depositions of matter took place in the joint, and the man died. He agrees in almost all that Mr. Thornton has stated, and the medical officers of this army have done honour to the profession by the improvements they have made. He considers it our duty to see how much we could do to save a limb.

Dr. M'Andrew added his experience to Mr. Thornton's in the success of excisions; and stated the happy terminations of all the excisions in the Castle Hospital, Balaklava. One check to this operation, heretofore, was the want of chloroform, they being both tedious and painful. Now, at all events, we may have anchylosis of the joints, and save the limb. He then read notes of three cases of excisions that he had performed, all of the head of the humerus; in one with more than two inches of the humerus. They all succeeded admirably, and the patients were sent home with still useful limbs.

Dr. Bems had performed two cases of excisions of the head of the humerus, and one of the elbow. They were secondary operations, and, as such, were quite successful. It was a useful question to consider whether they ought to be primary or secondary operations.

Dr. Salt said they were greatly indebted to Mr. Thornton for eliciting so much information. He was not here during what might be called the operating season, but he rose to refer to an officer, Mr. Timbrell, Paymaster of the 6th Regiment, who had received a compound fracture of both femurs from a gunshot wound in India. As he would not consent to amputation, he was left to nature. He recovered, and his legs are now five inches shorter than before. We find that wonderful cures do sometimes take place. In this case the bones exfoliated, and no operation took place. We ought to take a lesson from it in preserving a limb.

Dr. Taylor had attended the case referred to by Dr. Salt for a short time. He had found him with both thighs broken, and the bone exfoliating; he can now go out shooting. About the cases of excision of the hip-joint there were only six cases, as follows: 1. Dr. Macleod; 2. Mr. Blenkin; 3. Dr. Crear; 4. Dr. Hyde; 5. Dr. Coombe; and 6. Dr. O'Leary's, which alone proved successful. —*Med. Times and Gaz.*, Sept. 13 and 20, 1856.

28. *Extensive Caries of the Left Tibia and of the Upper Third of the Fibula; Dislocation of both Bones Backwards; Excision of Knee-joint; Recovery.*—Mr. G. M. Jones, of Jersey, records (*Med. Times and Gaz.*, June 21) the following remarkable case:—

"Elizabeth Noel, aged 9, was admitted into the Jersey Hospital, August 16th, 1855; but little of her previous history can be collected, as an uncle (the only relation she has) left this island the following day. It would, however, appear that for nearly two years she had been unable to walk without crutches; that poultices of various kinds, but mostly composed of herbs, were applied to her knee and leg at some small village on the coast of Brittany, where she had resided for some years, and that, in consequence of her helplessness and increasing bad health, she was sent to this, her native place, for parochial relief, but more especially to have the affected limb removed. The child's appearance indicated a strumous diathesis; there was considerable emaciation; her appetite was very indifferent; pulse 106; nights sleepless; and the glands of the neck were enlarged. The affected leg and knee presented an extraordinary appearance. The tibia was dislocated backwards, its head being thrust completely into the ham; the popliteal vessels were thus rendered easily perceptible; the patella, which rested in the interspace between the condyles of the femur and head of the tibia, was so atrophied as to be scarcely distinguishable; the head of the tibia was much expanded, also the whole shaft of the bone generally, and the integuments were in a state of *gonflement;* an open suppurating surface existed along its entire length, the bone being exposed in many parts, and distinguishable by the probe everywhere; several fistulous apertures existed laterally and posteriorly, three also along the fibula on its outer aspect; the probe detected bone in all of them. There existed an immense amount of lateral motion in the dislocated joint; the muscles of the thigh were much atrophied; the motions of the ankle-joint were natural. Four days after the child's admission, the following operation was performed while the patient was under the influence of chloroform.

"An incision beginning just below the patella was carried downwards along the almost entire length of the tibia. It was made in rather a zigzag manner, in order to include as many of the fistulous openings as possible; the integuments were then dissected on either side of the bones, so as to expose the diseased parts thoroughly. In many places the tibia was found divested of its periosteum, in others it was thickened and rough; while at its upper and lower thirds it was so softened as to necessitate scooping out to a considerable depth before healthy cancellous structure was met with; the gouge and chisel had, therefore, to be freely employed throughout.[1] After removing as much diseased bone as could be seen, the next step was excision of the knee-joint. This was performed, first by making a horseshoe flap, and then proceeding in the manner generally followed, though the extremely disorganized state of the joint rendered the removal of those parts which compose it much more difficult than is ordinarily the case.[2] A large portion of the joint-ends had to be removed; likewise the head of the fibula, and a large sequestrum from the upper third of this bone. The patella, after gouging its under part, was left. No vessel required ligature, though the hemorrhage was at times rather considerable.

[1] For some years I have not operated on joints or bones without having near me several of the tools employed by wood-carvers, and can highly recommend their utility in some cases. Those who have watched carvers at their work must have observed how admirably adapted are some of their tools for taking away some portions without injuring those they are anxious to preserve; so their occasional use in surgical operations prevents the unnecessary dividing of soft parts, and are often of far greater utility than those made for surgical purposes.

[2] This difficulty would have been greatly increased had I not been in possession of the valuable saw given me by the inventor, my esteemed friend, Mr. Butcher, of Dublin, to whose unwearied exertions in the cause of conservative surgery—which cause his great talents so eminently qualify him to advance, I am happy to have this opportunity of bearing my humble testimony.

"*State of the Joint.*—On opening the joint, extensive pulpy degeneration of the synovial membrane was met with; the cartilages covering the ends of the bones presented unmistakable traces of former disease; the semilunar cartilages were partially absorbed, the remaining portions disorganized; the anterior crucial ligament gone, the posterior one much absorbed, and consequently thinner than usual; the tissues generally sound. The joint was tolerably healthy.

"After the operation the leg was placed in a suitable box, and kept steady by means of pads, etc. Water-dressing applied; neither sutures nor adhesive straps were employed.

"It would be a work of supererogation, and tend to no practical purpose, to give anything like a daily account of the progress of this case from the time of the operation to the period of cure; suffice it to say, that everything progressed most favourably, and never for a moment did a single symptom occur to cause the slightest anxiety. At the expiration of ten days there was an evident melioration in the little patient's health; five weeks after the operation she was able to raise the whole limb; and three weeks after this, went about the wards on crutches; scarcely three months elapsed when she moved about without any appliances to the knee. The affection of the tibia and fibula did not keep pace with that of the joint; the healing process was much more gradual, owing to occasional sequestra coming away, which naturally kept up some irritation and discharge. For some time past the child has been in perfect health, strong and stout, and can walk quickly about with her little companions. Water-dressings, with the exception of the occasional use of the dilute nitric acid lotion, were the only local applications employed throughout. The most nutritious food, and an abundant quantity of wine and malt liquor was taken; also quinine, syrup of iodide of iron, and cod-liver oil. The child, as I have already stated, walks well. Cicatrices have replaced running sores; and the limb has almost resumed its natural appearance."

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29. *Incisions into Joints.*—Mr. Gay, in a paper read before the Medical Society of London (Oct. 18, 1856,) remarked, that three years ago he brought before the Profession, through the medium of this Society, a method of treating certain forms of articular disease by free incisions into the affected cavities; but that since that period his experience of this treatment had led him somewhat to modify his views, and had enabled him with more distinctness to define the particular forms and stages of disease for which it is more especially adapted. His object in making incisions was not merely to evacuate matter, as in the case of an ordinary abscess, and as this proceeding has been adopted and recommended by others; but as well, and even chiefly, for the purposes of allowing the more ready escape of cartilaginous or bony *débris*—often a cause of destructive irritation to a joint—and of setting up reparative action by making a closed or partially closed and diseased sac a part of a large and externally communicated wound. The results of his experience, as that of many of his professional brethren who had adopted his views, had been still more to convince him that free incisions were of the greatest value in those forms of disease to which they were appropriate, inasmuch as they bring the diseased processes to an equally speedy determination as after resection of the joint, and have the greater merit of leaving the flesh less mutilated, and the joint often almost as useful as before. Moreover, the incisions are often comparatively harmless, and, in case of failure, do not lessen the chance of restoring the limb that resection, or other measures of a graver nature, might afford. Mr. Gay then narrated a series of cases. The first, that of a lady, aged 43, who had suffered for three years from all the symptoms of disease of the cartilage and bony structures of the knee-joint, and had come to have the limb amputated. On making an incision into the joint, which Mr. Gay did, with the assistance of Mr. Stephens, over the seat of the principal pain, a small quantity of sero-purulent fluid trickled out with the blood. On examining the interior of the joint carefully, the cartilage was found to be entire, but slightly uneven, leading to the conclusion that the affection commenced in the synovial capsule, and had not seriously implicated other structures. The intense pain from which this

lady suffered, especially at night, prior to the operation, was completely relieved by it; and, with the exception of a rigor on the day following, succeeded by slight fever, which soon yielded to treatment, not a bad symptom followed. The capsule soon healed, and in a month the patient began to walk about. She has since enjoyed the perfect use of her limb. The second was a case of hip-joint disease of three years' standing. A sinus, having two external openings, led into the joint. The limb was bent upon the trunk, and the joint still flexible, but with great pain. The discharge had almost ceased, and the diseased action appeared to be almost stationary, and had been so for several months. The joint was fairly opened by enlarging the sinus; the head of the bone had been partially removed, and was bare. The joint recovered completely after fourteen weeks, with considerable mobility, quite enough to make the limb useful. The third case, of strumous disease of the articular cartilages of the knee-joint, of long-standing, in a boy nine years old; the pain was severe, and the discharge profuse. The incision did not answer in this case, the disease making progress subsequently, as though pursuing its natural course, with the addition of a severe wound, which refused to heal. The fourth case, of "strumous" disease of the knee-joint of three years' standing, in a girl twelve years of age. The joint was greatly distended, and had been so for more than six months. It was opened, a considerable quantity of sero-purulent fluid exuded, and, in defiance of every attempt to keep it open, the wound healed in three weeks, leaving the joint in the same condition as before. It was opened again after six weeks, and from this time the course of the disease was onwards, and removal of cartilages and caries of the ends of the bones, attended with profuse discharge, and failure of health and strength. The treatment in this was of no avail, and Mr. Gay had at last to amputate the limb. The articular ends of both bones were carious, and the spongy texture of the bones intensely inflamed for some distance along their respective shafts. No traces of tubercle, but small deposits of pus in those parts of the bone where the inflammation was most severe. The fifth case, a woman, aged 62, for disease of the joint belonging to the phalanx of the forefinger. It had existed six months, and remained stationary. The joint was quite loose, and grated when moved, also painful. A free incision on each side, and keeping the wounds plugged, led to speedy anchylosis. The sixth and seventh cases were of hip-joint disease in children, of 7 and 8 years of age respectively. The disease in both cases was in its early stages, and in one only had a sinus been formed. Mr. Gay opened the joints freely, but with somewhat varied results. In both fresh abscesses formed, and burst on the front of the thigh. In one, severe pain in the knee-joint followed, which could only be palliated by blisters, mustard poultices, and opium; in the other, symptoms of rapid pulmonary phthisis. These, however, subsequently yielded, and in both cases, after some weeks, the joint disease relapsed into its ordinary forms, the discharge in each being profuse, and the health bad. The incisions in these cases were useless. The last case was of a lad, aged 12, who had symptoms of subacute inflammation of the knee-joint. After three weeks of severe pain, an opening was made into the joint, and some matter passed away. This did not give much relief. The wound ulcerated, and soon after an opening formed spontaneously, nearly two inches from the first, and led into the joint. Very little matter exuded, and the joint continued extremely painful. Some white (apparently) sloughy matter could be seen through these openings. Chloroform was given, and the joint laid open by an incision, which passed through the two sinuses, and a large "pus-clot" was removed, which appeared to have filled the joint to painful distension. Suppuration followed, and the joint rapidly recovered, the lad being able, in six weeks, to move about by means of a stick, and the joint being entire. There were no indications of bone-disease in this case. After making comparisons between these several cases, the author drew the following practical conclusions: That joints might be opened with advantage. 1st. In cases of chronic inflammation of the synovial capsule of a joint, with effusion into its cavity, and pain; especially if these symptoms shall have been of long standing, resisted ordinary remedies, and are associated with marks of declining health, as in the first case. 2d. In cases of acute or subacute synovitis, where the symp-

toms are unusually severe, and the external coverings of the joint indicate a tendency to ulceration; or where, after a reasonable period, the symptoms do not remit, but indicate the existence within the joint of matter, which, from its becoming a source of irritation, threatens to produce more serious mischief, as in the eighth case. 3d. In cases where the joint is occupied by a bony or cartilaginous *débris*, which, from the small size of existing sinuses, cannot find exit; and 4th. In cases of carious disease of the bones, in which, from diminution of pain and secretion, as well as from other confirmatory symptoms, the disease in which the local affection has originated, shall appear to have exhausted itself, as in the second and fifth cases. He (Mr. Gay) condemned the practice (except for the purpose of relieving severe pain) in all cases in which a chance remains that the joint will recover without, and especially in what are termed "strumous" affections of the joints, so long as the continuance of profuse discharge indicates that the constitutional disorder, in which it is presumed to have originated, has not burnt out; and in the event of this becoming exhausted, only when the persistence of sinuses but slightly discharging beyond a reasonable time might lead the surgeon to suspect the existence within the joint of some dead and irritant matter, or the want of some general stimulus to final and reparative action, which, connecting a diseased sac with an external wound, would supply.

Mr. Stephens confirmed, from personal observations, Mr. Gay's report as to the successful termination of some of his cases. He also mentioned one or two similar cases that had come under his own care. One was that of a man who applied to him to have his foot removed on account of acute pain over and around the ankle-joint. The joint was opened, and several pieces of dead bone were removed, and the man was now following his employment as a navvy, having a perfect use of his foot with comparatively little anchylosis. Another case was that of diseased finger-joint, which was injured by a wound from a gimblet, and which, by similar treatment perfectly recovered. His colleague, Mr. Chance, had also operated for diseased knee-joint upon a young girl, of a strumous diathesis, and altogether in a most unfavourable condition. She remained 12 months under treatment, severe symptoms supervened, and she would probably have sunk but for the most constant and careful nursing; she, however, recovered, and by instrumental aid, could now walk about with the fair use of a limb which once threatened to destroy her.

Mr. Rogers Harrison said he had known many diseased joints, doomed for amputation, recover without any surgical treatment whatever.

Mr. Headland thought it a most serious thing to deal with the larger joints in the way recommended; and he should be glad if the author would furnish some guide for a strict selection of cases in which the operation might be performed with safety. When the constitution was involved by active inflammation and nervous disturbance, the irritation was likely to be considerably aggravated by opening the larger joints; the origin of disease was frequently in some other part of the body, and the patient should be treated for the origin rather than for the local manifestation.

Mr. Price adverted to the tendency of tuberculous disease of the articulations to spontaneous recovery, and expressed an opinion that in a few years' time, the amputation of a lower extremity would be a rare occurrence. He had lately saved four limbs which seemed to require amputation, by the operation of resection.

Mr. Henry Smith said he resolved to try the plan recommended by Mr. Gay when that gentleman brought the subject before the profession a few years ago; and he had since adopted it with considerable success, never having seen any evil effects from the treatment. *Small* openings into suppurating joints, as formerly recommended by some surgeons, should be discountenanced. Two years ago he opened a diseased elbow-joint, which was completely disorganized; and, though the case appeared a most unfavourable one, an admirable cure was effected.

Mr. Hancock said, the system propounded appeared to be only successful in those instances in which, in consequence of the long duration of the disease, the actual structure of the joints had become so changed as to diminish the

danger of opening into their cavity. Where the disease was recent and progressing, so far from the opening giving relief, it appeared to be attended with an aggravation of the symptoms. Such had been the result of his own experience. He had been willing to give the system a trial, but he thought he had done great mischief by following it. The cases in which Mr. Gay had made incisions into the sinuses connected with the hip-joint would get well by counter-irritation and constitutional treatment. The practice of incising small joints was followed by Mr. Lynn twenty-five years ago; such incisions might be usefully made in fingers, whose entire removal was rarely necessary.

Mr. William Adams said that in several of the cases mentioned by the author complete destruction of the joint had not taken place. He thought Mr. Gay had understated the success with which his practice had been attended.—*Med. Times and Gaz.*, Oct. 25, 1856.

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30. *Leg of a Child torn off at the Knee.*—Mr. Pollock exhibited to the Pathological Society, Nov. 4th, 1856, the leg of a child torn off at the knee from its becoming entangled in the wheel of street-cab. The child was brought into St. George's Hospital in the afternoon, and was seen by Mr. Cæsar Hawkins; he was then in a great state of collapse. On examination, it was found that the left leg had been entirely severed from the thigh at the knee-joint. The condyles and articular surface of the former were entirely exposed, and the soft parts were cut round, almost as if amputation by the circular incision had been performed without the bone having been sawn off. There was a simple fracture of the femur on the same side, about its middle, and a good deal of contusion. There was also a degree of tenderness of the abdomen, which led to the suspicion that some visceral injury had been sustained. It was impossible to say what quantity, or if much blood had been lost; but there was no tendency to hemorrhage from the wound, nor from the divided popliteal artery, without any tourniquet or pressure being applied to the femoral. The child having rallied somewhat, Mr. Pollock removed the portion of the thigh below the fracture, and brought the edges of the wound together with sutures. The tenderness of the abdomen had somewhat increased during the evening, and as the urine drawn off contained much blood, it was evident that some rupture of the kidney or bladder might be looked for.

The leg was picked up by a policeman, and brought to the hospital after the child. The patella was found attached to the leg, but the cartilages of neither patella nor tibia were injured. The curious point in connection with this accident was, that the sciatic nerve was torn out with the leg, and was found attached to it some two feet in length. The boy died two days after the accident. Much extravasation was found along the course of the sciatic, and in branches of the sacral plexus on the same side. Some of these branches were shreddy, and broken off close to the ant-sacral foramina. The sacro-iliac joints were separated, and the pelvis fractured on the right, through the pubis, into the obturator foramen. A sharp piece propelled inwards, and corresponding to this, was a rent in the bladder. Urine had become extravasated in the surrounding cellular tissue.—*Med. Times and Gazette*, Nov. 15, 1856.

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31. *Displacement of the Trachea, and its Separation from the Larynx, from the Kick of a Horse.*—Dr. Berger, Surgeon-General of the Prussian Army, reports the following unique accident:—

Cannonier B——, of the Artillery of the Prussian Guard, was kicked by his horse a little below the lower jaw, whilst engaged in washing its hind hoofs. A small, unimportant skin-wound exhibited itself at the edge of the jaw, and some blood, but not much, flowed from the mouth. The neck, however, rapidly swelled to an extent sufficient to materially impede respiration. The patient complained only of a peculiar sensation of weight in the epigastrium, and stated that he felt as if blood had collected in his windpipe and prevented his breathing freely. There was no fracture or injury to be discovered in the larynx. The patient was at once bled, generally from the arm and locally by leeches, without the slightest effect upon the orthopnœa. The latter symptom continued to increase rapidly until so fearful an emphysema had established itself, that

the chest, neck, and face of the man were swollen to a frightful extent; and in this state, suffering great agony, he died, within an hour and a half of the receipt of the injury.

The *post-mortem examination* discovered a complete rupture of the trachea from the larynx, the latter being uninjured. The separation commenced at the left side of the cricoid cartilage, proceeding to the right as far as the middle of the posterior edge, so that a third part only of the union of the trachea and larynx remained intact. Several of the cartilaginous rings and ligaments of the trachea were ruptured, and it was found filled with coagulated blood. The thyroid, cricoid, and arytenoid cartilages were quite uninjured. The heart was in a normal condition; the lungs were congested, and of an unusually dark colour.

This I regard as a very singular and interesting case; not only from the peculiar nature of the injury sustained, but from the great disproportion of the external wound to the internal damage effected. A slight abrasion of the skin at the edge of the lower jaw was all that could be observed or discovered during life, and yet the autopsy displayed organic dislocation and rupture of so extensive a character that death ensued within an hour and a half of the occurrence of the injury. Whether, had its true nature been at once ascertained, an immediate resort to tracheotomy might have been attended with temporary advantages, may, perhaps, be a question. I say temporary advantage, for, with so serious a displacement, anything approaching to a cure could not, I apprehend, be expected.—*Lancet*, Sept. 6, 1856.

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32. *Gunshot Wounds of the Abdomen.*—Dr. Geo. H. B. Macleod, in his Notes on the Surgery of the War (*Edinburgh Med. Journal*, Sept., 1856), states that "The abdomen has been severely contused by gunshot 113 times; of which number 25 died in the Crimea, 35 were discharged to duty, 51 were sent to other hospitals or stations in the rear, and two remained in hospital, the result being undetermined at the end of the year. The cavity has been penetrated, and the contents injured, 80 times; and of these 69 died, and the remainder were sent away from the Crimea, it is to be presumed, mostly recovered. Of these 80 cases and 69 deaths, 9 cases only and 5 deaths were injuries of the solid viscera. 41 cases appear in the return as 'doubtful,' 17 of whom died. The contents of the abdomen have been perforated 27 times, with 16 deaths; and of 3 cases which are entered separately, as 'ball lodged in abdomen,' all died. Thus it seems, that while severe wounds of the chest have been more numerous than severe injuries of the abdomen, that the latter have been very much more fatal. The strong aponeurotic wall of the abdomen frequently deflects balls, and causes them to make a greater or less circuit superficially. That these wounds of the walls, if followed by sloughing, as they not unfrequently are, must so weaken the parietes, as to make the patients who have thus suffered, more liable to herniary protrusions than formerly, is extremely probable. Shell wounds of the surface have been those in which extensive sloughing has appeared most commonly. In one case of this nature, nearly the whole parietes of the abdomen disappeared by sloughing. Many of the cases which prove fatal on the field are said to be penetrating wounds of the solid viscera of the abdomen—the hemorrhage is so great and uncontrollable. As the fatal result in wounds of the hollow viscera arises from the extravasation of their contents, their mortality chiefly depends on their extent. Their being *early* brought under judicious treatment, will save many which appear desperate. In many cases it is impossible to say with certainty whether the ball has traversed the cavity or not, even though the apertures of entrance and exit would appear to leave no other view possible, than that the cavity and its contents have been perforated. Such was the case, particularly in the following instance: A ball struck a Frenchman just above the crest of the ilium, and about four inches from the spine, and escaped close below the inner end of the clavicle of the same side. At the time he was wounded, this soldier was on his knees, as he was rising from the ground on which he had been lying. He had hiccup and considerable prostration for three days, and also an attack of pleurisy, all of which symptoms left him in about a fortnight from the time of

his being injured, and he recovered perfectly. In this case one would suppose, that not only the abdominal cavity, but probably the liver, diaphragm, and lungs, had all been wounded; but yet the slight symptoms which followed would rather show that the ball had run close under the integuments, probably piercing the diaphragm close to its anterior border, and that none of the viscera of the trunk were injured.

"I have heard of one case as having occurred during this war, in which, subsequently to a gunshot wound of the abdomen, the ball was passed by stool during convalescence, but I have been unable to get the fact properly verified. The treatment followed in gunshot wounds of the abdomen has not, so far as I know, in any way differed from that usually pursued. Opium, in full doses after bleeding, has always appeared most to be relied on. I have only notes of three cases of recovery out of a considerable number of instances of penetrating wounds of the abdomen from gunshot, which I saw in the Pera Hospital during the winter of 1854. In one, a fistulous opening existed for a considerable time, below and to the left of the umbilicus, and the other had a similar opening in the left iliac region. In both cases a cure was effected without any surgical interference. In a third case, the ball entered in the dorsal region, and about one and a half inches from the spine on the left side, and escaped on a level with and to the left of the umbilicus. No bad symptom ever arose, except the temporary appearance of a herniary protrusion at the wound in front, which was easily returned."

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33. *Gunshot Wound of the Bladder.*—Dr. Geo. H. B. Macleod, in his Notes on the Surgery of the War (*Edinburgh Med. Journal*, Sept., 1856), relates the following very remarkable case:—

Griffith, private 57th Regiment, was admitted into this Hospital in June last. A ball had entered his left hip close to the tuber ischii, and escaped on the abdomen, two inches above the symphysis, a little to the right of the middle line. Urine escaped by the anterior opening. A catheter was passed into the bladder and retained there. He had no bad symptoms of any kind for twelve days. His urine passed by the catheter and also by the opening on the abdomen. His pulse remained quiet and his abdomen without uneasiness. His general health was unimpaired, and his bowels acted regularly. The posterior wound, through which urine never passed, closed rapidly. On the twelfth day, he had severe pain in the abdomen, which was, however, relieved by a dose of opium, and he never afterwards had a bad symptom or uneasy feeling, except the irritation occasioned by the urine flowing on the abdomen, which could not be altogether prevented. His urine was loaded with mucus and pus during the period of cure, and he passed several small pieces of bone both by the urethra and by the abdominal wound. At the end of six weeks he could retain his urine, and pass it at pleasure by the natural passage, in a full stream. For a month he had been unable to prevent his urine flowing constantly away. In about two months from the period of his admission the wound on the abdomen was completely closed by the use of nitrate of silver. His strength, which had somewhat failed, was at that time quite restored, and he was walking about the ward convalescent. At this period he passed from under my notice, but I learned that the wound on the abdomen had reopened, and that he could pass his urine, without any pain, through this opening, in a continuous stream, but that untimely, before he went to England, it had permanently closed.

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34. *Successful Ligature of the Arteria Innominata.* By M. Peixoto.—M. Moura, a distinguished Portuguese Doctor of Medicine, aged thirty-three, was the subject of this case. An erectile tumour of the right ear began to develop itself in 1832, and in 1845, M. Nélaton tied the posterior auricular, considerable hemorrhage following the fall of the ligature. After temporary amendment, the tumour again made great progress, and frequently gave rise to serious hemorrhage; the patient being then at Rio Janeiro, M. Peixoto tied the common carotid in the middle of its course, 14th November, 1851, and on the 27th, surrounded the tumour itself by a ligature, which induced its separation by sloughing. On the 4th December, some bleeding was observed where

the carotid had been tied, the ligature not having yet come away; and as the hemorrhage recurred again, it was resolved to apply a precautionary ligature (*d'attente*) lower down. On the 8th, this was executed on the trunk of the innominata; and in a later communication to the Academy, the author states the cure was completed in two months.

M. Velpeau, reporting upon this case (*Bull. de l'Acad.*, tom. xix.), observes, that as far as he is aware, this is the first example of a cure resulting from the artificial obliteration of this artery; although the cases of accidental occlusion published by Pelletan, Martin-Solon, and Darrach, had already shown that its occlusion did not deprive either the arm or the brain of a sufficient supply of blood. The cases of operation have hitherto all terminated fatally. Mott, who first practised the operation in 1818, lost his patient on the twenty-sixth day. Gräfe's patient died on the sixty-eighth day, Bland's on the eighteenth, and Hall's on the sixth. In Lizar's case, death occurred at the end of three weeks. After M. Kühl's operation, in which the ligature comprised the subclavian and the carotid close to the innominata, death took place on the third day. A patient of M. Arendt's died on the eighth day; and two operations performed by M. Bujalski were followed by death in two or three days. Finally, M. Hutin lost his patient on the eighth day. So that ten operations have furnished as many deaths.

After all, M. Velpeau adds, this is not an example of ligature of the innominata, properly so called; for although a ligature (*d'attente*) was applied to and flattened the vessel, this was not tightened. The patient was cured, but nothing allows us to affirm that the ligature bore rather upon the common trunk than upon the origin of the carotid alone. Nor is there anything that absolutely proves the closure of the innominata, if closed it be, not to have taken place as a consequence of the first ligature, rather than under the mere influence of a ligature *d'attente*.—*B. and F. Med.-Chirurg. Rev.*, Oct., 1856, from *Mémoires de l'Acad. Imperiale de Méd.*, tom. xix. Paris, 1855.

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35. *Treatment of Aneurism by Manipulation.*—Mr. Fergusson read a paper on this subject before the Royal Medical and Chirurgical Society (Nov. 11th, 1856). He explained this term to mean peculiar forcible squeezing of the aneurismal tumour, with the intention of breaking up the fibrin supposed to be within; so that, being displaced, it might possibly block up the distal end of the tumour, or the artery leading from it. After sketching the various means whereby Nature is supposed to bring about occasional spontaneous cures, cases having come under the author's observations, in which spontaneous cures had seemingly been caused by displaced fibrin, the author proceeded to show that, while surgeons had in some degree followed the dictates of Nature, as gathered by experience in their attempts at cure, they had not, as far as his knowledge went, attempted to imitate the actual displacements of fibrin by any active interference on their part. He then explained how he had for many years entertained the idea that a cure by such a plan might possibly be effected. After many years watching for a case, in which for want of a better plan, such a one as he indicated might be used, a case of aneurism of the right subclavian artery, between and outside the scaleni, came under the author's notice in February, 1852, wherein, appreciating all the known dangers of the usual mode of treatment, he resolved to try this plan: The flat point of the thumb was laid on the aneurism, which was about the size of a hen's egg, and, when the sac was emptied of fluid blood, the inner surfaces and supposed contents were rubbed against each other. The pulse, which had been carefully examined, was immediately arrested in all the vessels below the aneurism, and the patient became faint and giddy. In six or seven hours the pulsations returned, but the author repeated the manipulations the next day with a similar but not lasting effect on the circulation in the arms; for it was not till seven or eight days that circulation could be readily detected in the arteries. The tumour gradually diminished in size and in force; a pulsation, and various indications, particularly the gradual enlargement of a branch of the subclavian artery, at the root of the neck; the supra-scapula, or the transversalis colli, gave every hope that a cure

was in progress. After seven months, at which date the tumour was much diminished, the patient had a severe feverish attack, accompanied with excruciating pain in the tumour, and died after a few days' illness. On dissection, it was found that the axillary artery was blocked up, and that the tumour had suddenly extended or had given way in the direction of the axillary plexus of nerves, which was supposed to account for the excessive pain. Another case, in most respects analogous to the above, came, er long, under the author's notice, and was treated in the same way. A series of phenomena followed, similar in many respects to those observed in the former. The tumour in this case underwent a slow change, and ultimately disappeared between the twenty-second and twenty-fourth months after the manipulation. After discussing the principal phenomena connected with these cases, and expressing an opinion that the results in many respects corroborated the views of the author, he left the particulars for the further consideration of those who felt interested in the subject.—*Med. Times and Gazette*, Nov. 15, 1856.

36. *Dissecting Aneurism.*—Mr. Young related to the Reading Pathological Society an interesting case of dissecting aneurism of the abdominal aorta. It occurred in a female aged 57. She was, when first seen, suffering from severe pain in the bowels, back, and left side. She was restless, the countenance was pale, tongue moist and covered with a white fur. The pulse was 70. There was sickness with frequent and painful micturition. Mustard poultices, with opiates, demulcents, and diuretics were administered, but the sickness increased, and she sank suddenly. It was ascertained that, in lifting a saucepan on the fire, she felt something give way, which immediately was followed by the fatal symptoms. At the autopsy, a large clot of blood was found effused into the cellular tissue behind the peritoneum, pressing forward between the two layers of the mesentery and extending into the pelvis. In getting through the blood to the aorta, the cellular coat was found to be separated from the fibrinous about four or five inches, towards the bifurcation. There was a slit in the fibrous coat about one inch in length, somewhat higher up than the cellular. The inner and fibrous coats were found to be red and soft, so as to tear easily, and they were readily detached from the outer. There were also several patches of arthromatous, cartilaginous, and bony deposits. Mr. Young considered that the inner and fibrous coat had been the seat of the disease for some time, and which, in all probability, gave way on the morning of the exertion of lifting the saucepan, thus producing the dissecting aneurism; but that the death was caused by the rupture of the external coat during the act of vomiting.—*Assoc. Med. Journal*, Sept. 20, 1856.

37. *Best Treatment of Varicose Ulcers and Varicose Veins.*—The treatment of varicose veins is a practical every-day subject, inferior to none in interest for the hospital surgeon. Indeed, allied as this affection is, externally, to questions of practical surgery on the one hand, and depending for its causes on relations of the general venous system and general internal health on the other, a wide field of speculation is afforded as to treatment. In hospital practice, accordingly, as the practitioner may be more of a physiologist and anatomist, or more or less influenced by the ordinary routine of simple surgical treatment, ligature of veins, constitutional treatment, or means of blocking up these vessels, will be trusted to, previous to healing the varicose ulcer. A good deal of the danger of ligature of veins is found to originate in the fact that the vein is enlarged; and the ligature, when it should go deeper than the vein, will be found to have wounded or transfixed the vein, and caused phlebitis.

Mr. Paget's experience every year assures him more and more of the superior value of the treatment of varicose veins by the caustic issue, or the extemporized mixture of lime and potash. There is no mode of treatment yet discovered, according to Mr. Paget, which is entirely free from risk; but, from pretty extensive inquiries in the hospital practice of such surgeons as Sir B. Brodie, Mr. Lawrence, Mr. Skey, various hospital surgeons in the provinces, and in France and Germany, etc., Mr. Paget is inclined to the impression that the treatment of varicose ulcers and varicose veins is most safely and most effectu-

ally conducted by means of local applications of caustic issues on the surface, which thicken the coats of the venous trunk.

A very well-marked case of varicose ulcer of the leg and leg and foot, which incapacitated the poor young man from employment and deprived his family of support, has been for some weeks in St. Bartholomew's, as well as a second case, where the varicose vessel gave way, but has again healed up. The former case is that of A. D——, a young and apparently otherwise active and healthy man aged 28. He has been all the present month (September) under treatment for a varicose condition of the veins of the lower extremity: his disease consits rather of a very troublesome ulcerated condition of the ankle and foot, which he cannot himself conceive to be dependent on the state of the veins. The history he gives of the case is not very defined, or is but a recapitulation of a set of abortive attempts to cure his ankle by ointments, lotions, salves, etc., each in its turn recommended to him as the most specific thing in the world for an inward disorder of the constitution, but still only making the disease worse.

The form of caustic used by Mr. Paget consisted of potassa fusa ℈ij, quicklime ʒj, separately in powders in small phials, and subsequently mixed with a glass or asbestos rod at the bedside, with spirits of wine, when used. A dozen or two of small pieces of common adhesive plaster are next obtained, each the size of a penny, a small circular hole being cut in each, of the size of a pea, or a silver threepence. One of these perforated pieces of plaster is placed over each projection or varicose enlargement of the vein, a very small quantity of the caustic paste is next applied with a bone spatula to the skin over the vein, in the circular hole left in the plaster; ten to twelve or fifteen minutes will be sufficient time for the issue to produce its effect, at the expiration of which period, the whole limb is carefully sponged with warm water, and all the plasters and caustic washed away. Little else was necessary in this case, as in the general class of these cases, the issue merely requiring simple dressing, while the ulcers in the ankle went on healing *pari passu*.

As a local application to the ulcer during the action on the varicose vein of the issue, any simple ointment or black wash is all that is required.—*Association Medical Journal*, Sept. 27, 1856.

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38 *Caustic in Nævus.*—Dr. Macke recommends the following caustic as a highly useful application to *nævi materni*, especially in young children. Corrosive subl. 4, collodion 30 parts. It is to be applied by a small brush, and desiccation takes place so rapidly that the action of the caustic does not extend beyond the spots it is applied to. A solid eschar, one or two lines in depth, falls off in from three to six days, and the pain induced is inconsiderable, and of short duration.—*Med. Times and Gaz.*, Oct. 25, from *Revue Méd.*, 1856.

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39. *Iodine in Hygroma.*—M. Grose has found, in sixteen cases of hygroma, the application of tinct. iodine twice a day, upon compresses secured by means of a bandage, always attended with success. In very delicate skins the first applications may excite vesication, and then longer intervals may be required, or the iodine may be diluted.—*Moniteur des Hop.*, No. LXXII.

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40. *Radical Cure of Unstrangulated Hernia.*—M. Gerdy's operation for the radical cure of hernia has not found much favour in this country; and this coldness can hardly be wondered at when it is recollected that the operation is connected with very serious risks, and has for its object the relief of a displacement which entails, in simple cases, no great inconvenience. There are, however, patients who become tired of wearing trusses (especially as the latter sometimes exercise a very uncomfortable pressure), and they request to be freed, by operation, from a complaint which often embitters life.

It would appear by a thesis, lately defended by M. Amen at Paris, that the operation is much more resorted to in France than in this country; and Gerdy's statistics are certainly calculated to remove apprehensions as to the danger of peritonitis; for he found only six deaths out of 700 operations, two of the six being unconnected with the actual surgical proceedings. We need hardly say

that Gerdy's method consists in offering at the ring the resistance of a cutaneous plug, formed by invagination of the skin in the inguinal canal. It is also well known that M. Velpeau obliterates the inguinal apertures by injections of iodine into the sac.

M. Amen gives seven cases treated by these injections; out of these, three were relieved, and four completely cured. The method by invagination was used twice by M. A. Guérin at the Charité, and once by the author himself. After these latter operations, it is important to induce the patients to wear well-made bandages, at least for a twelvemonth; and we perceive that, at the Charité, Mr. Bourjeaurd's were considered by M. Guérin to be the best calculated to promote the eventual cure, as they exercise sufficient compression without injuriously distressing or chafing the abdominal walls. It is plain that, in such instances, steel trusses could not be thought of; and perhaps there would be fewer persons desirous of subjecting themselves to the radical cure, if these elastic bandages were more extensively used.

One of the cases treated by injection is worth quoting: A waiter, aged 29, was admitted under M. Maisonneuve at the "Hôpital Cochin." Hernia, right inguinal, and of six years' standing. He wished for the operation, because the hernia was troublesome, and gave him a great deal of pain. On the 5th of September, 1854, equal parts of tincture of iodine and water were thrown into the sac, and left three or four minutes. Severe inflammation of the parts ensued; but the tumour diminished after the eighth day, and by the fifteenth it was of the size of a walnut, perfectly plugging the ring. Six months afterwards the tumour was the size of a nut, and the patient made all kinds of exertions and efforts without thinking any longer of his hernia.

One of M. A. Guérin's cases of invagination refers to a man-cook, aged 22. Small inguinal oblique enterocele, six years; habitual pain makes him seek the radical cure. On the 22d of February, 1856, M. Guérin operated by invaginating the integuments to the bottom of the canal, and fixing the skin by a strong thread and bead. Inflammation ran very high until the fifth day after the operation, when the thread and bead were removed. On the 6th of March, fourteen days after the invagination, the ring was obliterated, and six days afterwards the patient left the hospital, with one of Mr. Bourjeaurd's elastic bandages, which he is cautioned to wear for some time.—*Lancet*, Oct. 18, 1856.

41. *Use of Chloroform in the British Army during the late War.*—Dr. Macleod asserts (*Edinburgh Med. Journal*, Sept., 1856), "that during the whole course of the war, there has been only one death which can, with any fairness, be said to have arisen from the effects of chloroform. It is impossible to say in how many cases it has been used; but as very few surgeons, indeed, failed to employ it on all occasions, it must have been administered to a very large number of patients. The evidence in its favour has been overwhelming, and sufficient to convince all, with one or two exceptions. Its use in amputations of the upper third of the thigh is considered questionable by a few surgeons of experience, under the old mistaken notion that its action is one of depression; but the vast majority of the surgeons of the army indorse the opinion entertained at home, that, when properly administered, chloroform prevents fatal depression in place of producing it. The patient who died was anæsthetized sitting in a chair. Artificial respiration, by pressing on the ribs, was, I understand, the remedy used to resuscitate him. Several other patients are also said to have died from the effects of chloroform administered to them, but few will subscribe to the view which attributes death twenty-four or thirty hours after a capital operation, for which the patient was anæsthetized, solely, if at all, to the employment of the chloroform."

OPHTHALMOLOGY.

42. *Malignant Disease of the Eye.*—Mr. F. A. Bulley, in some "Notes of Surgical Cases in the Royal Berkshire Hospital," communicated to the Reading

Pathological Society, states that two specimens of malignant disease of the eye in children were presented, one by Mr. G May, the other by Dr. McIntyre. Mr. May's case did well up to the time of the report, and recovered the effect of the operation. Dr. McIntyre's was a case of medullary sarcoma of the eye. The patient was three years old, and was first seen by him in Dec., 1855. Its complexion was fair; general aspect strumous; the iris was bright blue. The pupil of the affected eye was dilated to the utmost extent, the iris being obliterated to a mere line: whilst the ball was considerably enlarged, and of a pale blue colour. At the back part of the eye a vegetative growth was found, of metallic appearance, which had, it was said, been gradually increasing. The child was latterly feverish and restless, and had violent startings in sleep. Removal of the organ was recommended, and coincided in by Professor Ferguson; and the operation was performed, under chloroform, on Jan. 7th, 1856. The child recovered from the operation; the fever and startings in sleep having entirely subsided. On Feb. 4th it was seized with convulsions, which gave way to the usual treatment. On the 7th they recurred, and terminated fatally.

A *post-mortem* examination revealed the existence of the disease, to the depth of an inch in the base of both anterior lobes of the brain; and the commissure of the optic nerves was almost destroyed by it. The portion affected was soft, and of the appearance of raspberry cream. The sinuses were loaded, as well as the cerebral substance generally.—*Assoc. Med. Journal*, Sept. 13, 1856.

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43. *Value of the Ophthalmoscope in Eye Diseases—Use of the Upper or Lower Section in Keratonyxis—Curiosities of Ophthalmic Practice.*—The recent introduction of the ophthalmoscope into the surgery of diseases of the organ of vision begins to be followed every year by better and better results. Too much, at first, was expected from it in eye diseases, and some amount of disappointment speedily followed its first introduction—the certain forerunner very often, in science, of a better state of things. Every season now, since the labours of Jäger especially, the ophthalmoscope gives us at least negative results of very great value. A very long experience, indeed, and comparison of cases, is necessary before the student or surgeon begins to see anything at all; but then it is very remarkable how easily various inflammatory or other morbid deposits are discovered in the retina, "Jacob's membrane," lens, vitreous humour, &c. Chalk-like deposits in the "membrane of Jacob" are, for instance, common in old people; inflammatory thickening of retina, &c., are at once detected.

An interesting case of double cataract was recently operated on by Mr. Bowman, and is here appended, where the examination beforehand with the ophthalmoscope at least pointed out the cataract as coming within a class or category of cases where operation was likely to succeed, as the state of the case this week proves. The lenses appeared at first to be marked with radiating lines or central streaks, as in cases generally where the diseased part is easily enucleated by keratonyxis, and where the ophthalmoscope shows that the cause of blindness is not amaurotic, but confined almost exclusively to the lens. The August and September months in hospitals are interesting for ophthalmic cases, as various German and French ophthalmologists visit London, and are attending Mr. Bowman's *clinique*.

There are few operations which require such delicacy of hand and touch as those connected with cataract, so as not to injure the iris, or, by rough manipulation, to extract the vitreous humour, and leave untouched the lens. We have seen the latter very recently done (as who has not?), and mention it here, as the cause was a too small section of the cornea. Here again there is a difficulty; for if the section be too large, the same may occur; experience like that of Mr. Bowman, or Mr. Critchett, or Mr. Dixon, deciding the precise character of the section that should be made.

Wm. Smyth, aged 40 years, applied at various hospitals, but at last came to the Ophthalmic. He is quite blind; his blindness gradually set in, he says, and has been coming on twenty years. He has followed farming occupations, but now is no longer able to see or work. In short, in such an old standing case of blindness, there seemed little or no hope; but, as a last resource, he came under Mr. Bowman's care.

Examination with the ophthalmoscope discovers very extensive disease of both lenses. Various rough central radiating planes are well marked, and alternate with finer lines. The posterior surface of the lens in each eye seems almost similarly affected; while, under the effects of atropine dropped into the eye, one perceives the lines of planes branching more and more finely, with a fine striated haze, as if the cataract or cause of blindness was simply in the lens, and came somewhat under the control of the zonula of Zinn, or the thin layer which connects the anterior margin of the retina with the circumference of the lens.

Mr. Bowman extracted both lenses by *lower* sections of the cornea, as the eye was irritable and turned up. A small piece was also sliced out of the lower part of the left iris. The lenses were found soft. The operation did not differ from a hundred of others seen here every year.

A week subsequently the result of the operation was perceived to be very good, with the exception of some opacities still remaining; these, in a few days after (September 5), were broken up by a needle again introduced; which, in its turn, was followed by absorption, and a condition of vision this week quite wonderful, judging by the result of many cases of a similar kind.

Amongst the "curiosities" of surgery, Mr. Critchett related, in connection with this patient, a case of closed pupil or cataract in an old lady, unexpectedly cured by an accident! The handle of a saucepan was pushed into her eye, and poked out the lens, with the most admirable effect on her vision. In another similar case, a man pushed a curette into his eye by slapping his hand against the surgeon's hand. In a case of cataract with closed pupil we saw a good cure also recently effected by tearing the pupil with two needles. A singular case of closed pupil, with congenital cataract, was also mentioned incidentally, where, on a single application of atropine, vision was restored (temporarily, of course) almost in an instant. The patient seemed in a dream of astonishment.—*Association Medical Journal.*

MIDWIFERY.

44. *Placenta Prævia.*—Mr. T. O'Connor relates the two following examples of this.

Case I. was that of a woman, aged 35 years, in her seventh pregnancy; her previous labours had been without complications of any kind. I was called to her a fortnight previously to her labour having come on; and a more frightful case of syncope I have no recollection of witnessing. The bed and clothes were saturated with blood; the woman's face was pale as death; she was lying across the bed apparently lifeless. Having learned from the attendant that she expected to be confined in a month, I made an examination, and found the os uteri undilated; there were no labour pains. Although the hemorrhage had ceased, I thought it advisable to plug the vagina, feeling that further discharge, in any quantity, must be fatal. As soon as she was able to swallow, I gave a drachm of Hoffmann's anodyne in a little water, and repeated it every fifteen minutes for four or five times. She then became for a moment conscious, then incoherent, and immediately the fainting returned in an appalling degree. This condition, alternated with momentary conscious intervals, lasted two hours, every moment of which I expected to see her expire. By this time, I contrived to administer with a spoon two ounces of compound sulphuric ether. A tranquil sleep ensued; and I left her with injunctions that I should be sent for when she awoke, or if flooding or any untoward symptom occurred. The sleep lasted two hours, when, agreeably to my instructions, I was again summoned, and found her refreshed and doing well. I then withdrew the plug, as there had been no return of flooding; and as it had been now four hours in the vagina, I enjoined, for the present, the recumbent position. After two days attendance I discontinued my visits, as there was no appearance of labour,

and as the woman was verging towards convalescence, having taken care that the bowels were relieved by castor oil.

In a fortnight afterwards, I was again called to the same person early in the morning, in a great hurry. I learned from the messenger that, while turning in bed, she had been seized with flooding to an alarming extent, and had fainted. On arriving at the house, I found on the boards, under the bed, a pool of blood, which must have amounted to two or three pints, having filtered through the bed after inundating the clothes. The woman was faint, and gasping for breath; the hemorrhage had ceased. On examination, I found the os uteri patulous and dilatable, capable of admitting my middle finger, which I passed up, and then discovered the cause of the hemorrhage. From the first, indeed, I had suspected, but could not before satisfy myself by touch, as the dilating process had not then commenced, that the placenta was adherent to half the circumference of the os tincæ. The head was presenting. As the woman still continued alarmingly faint, I administered two drachms of compound spirits of sulphuric ether in a little water. I separated the placenta from its attachment to the os uteri, punctured the membranes with a long probe, and, having infused a couple of drachms of ergot in half a pint of boiling water, gave a fourth part of this every twenty minutes. This brought on active labour after the third dose; and in two hours the woman was delivered of a child of more than average size, which gasped two or three times, and expired. My patient recovered from this fearful state in an incredibly short time, and is now in robust health. Not the least remarkable point about those cases generally is the rapidity with which the women recover.

Case II. I was hurriedly summoned to a woman, aged 28 years, in her third pregnancy, and whose previous labours had been natural. Her husband, who was the messenger, in great excitement said his wife must be either dying or dead, as he thought no person could survive such a loss of blood; and truly, on arriving at the house, which is three miles from my residence, a spectacle presented itself calculated to appal any one who was not totally indifferent to human life. The chamber utensil (which was a large one) was filled with blood; the floor in several places was covered; the bed and clothes were soaked; the woman was passing rapidly from one faint to another. I immediately gave her two drachms of Hoffmann's anodyne in water, and proceeded to examine her. I found the os uteri so dilated as easily to admit two fingers; the placenta was adherent all round, with a rent in its centre, from which gushed the torrent of blood which had well nigh swept off my patient, and from which oozed still blood in small quantity. As the woman had not yet recovered from the syncope sufficiently to justify me in proceeding to deliver, and as there was still hemorrhage—small in quantity, it is true, but liable to be increased to a gush by the first pain or the first rally from the faintness—and as she was at this time in the worst possible condition to bear any further loss of blood, I decided on firmly plugging the vagina, so as to place a pad against the rent in the placenta, and on assisting her out of the syncope, before attempting delivery, I therefore repeated the ether at intervals of ten or fifteen minutes during an hour, to the amount of a drachm at each dose. I then withdrew the plug, and administered the ergot, as in Case I. Having introduced my hand, and separated the placenta from its attachment to the os tincæ, after a most painful and bloody process, I succeeded in seizing one of the legs of the child. As the os was dilatable, I had little difficulty after this in completing the delivery, having saved the lives of mother and child.

Remarks.—I attribute the safety of both these women to the use of Hoffmann's anodyne. In Case I., the hemorrhage was very profuse, and its effects were terrible for the first few minutes; indeed, there was a fearful struggle between life and death, in which the latter would, I have little doubt, have obtained the victory, had he not been combated by the ether. What occasioned the hemorrhage? The placenta is adherent to half the circumference of the os uteri; the latter, in its progress towards development, or in other words, during the increase of its surface, being elastic or extensible, moves away from part of the placenta which is not endowed with elasticity, and lacerates some of the vessels of the latter: hence the gush of blood, which may

then and there be fatal by syncope, if the nervous energy is not excited by some agent capable of producing a powerful though not prolonged stimulus. That agent is, without doubt, Hoffmann's liquor. If we drag our patient through the first shock, we have routed the enemy for the present; the system will have righted itself before there is a return of the hemorrhage, when a new mode of proceeding may announce itself. The plug in the vagina performs no mean part in arresting the danger; for, a firm pad being placed in close contact with the lower walls of the uterus, these in turn press the open mouths of the vessels, and secure the formation of a clot. The ether must be administered freely and fearlessly. In support of this opinion, I may here mention a case of unavoidable hemorrhage, which I had the management of in the autumn of last year, and in the latter stages of which I had the valuable assistance of a highly intelligent physician and esteemed friend from a neighbouring town. In this case, one fit of fainting followed another in such rapid succession, with jactitation of arms and legs, relaxation of sphincters, and that utter state of prostration which too frequently is the immediate herald of death, that we did not hesitate to carry the use of this drug to the extent of between four and five ounces in three hours, with the happiest result. I mention this by the way, to fortify the opinion that this drug ought to and must be administered freely, in unavoidable hemorrhage, threatening by its extent the immediate death of the patient. Astringents are useless in this class of cases; if the loss of blood is profuse, the patient will die before they produce any effect, if effect is expected from them; and if the hemorrhage is not profuse, the patient will do equally well without them.—*Assoc. Med. Journal*, May 16, 1856.

45. *Quinine in Puerperal Fever.*—M. Beau, during a recent epidemic, has been trying, with considerable success, at the Cochin Hospital, quinine in large doses. He prescribes, at the onset of the disease, an emetic, or emeto-cathartic; and, immediately that its operation has ceased, he gives the quinine in quantities from at least 15 grains to 30 grains, according to the severity and tenacity of the case, in the twenty-four hours, in doses of 7 grains, taken at equal intervals. These doses almost inevitably give rise to the symptoms of quinine intoxication, which, in some cases, go on to the extent of intense maniacal delirium. It is only upon the condition of these symptoms being induced that benefit accrues. The first patient so treated manifested all the symptoms of intense puerperal fever, and had a pulse of 160; and, as she recovered, M. Beau treated all the women who subsequently took the disease in the same manner, and that from the beginning of the manifestation of its presence. From this time the mortality that had prevailed ceased. This agent has not, however, in any case, completely and immediately arrested the progress of the disease. All powerful, in some sort, over the febrile condition, and over all the assemblage of grave general phenomena, which attend the local lesions of the abdomen, and which might be termed the malignant elements of the disease. It exerts no effects upon these lesions themselves. It, as it were, decomposes the disease, and reduces it to its mere local elements; but the peritonitis or metro-peritonitis, which, from having been super-acute, takes on only a sub-inflammatory character, is henceforth easily dealt with. M. Leudet, and other practitioners, have already employed it as a prophylactic in this disease with success; but M. Cazeaux derived no benefit from some trials he has made of it.—*Med. Times and Gaz.*, Oct. 25, from *Gaz. des Hop.*, No. LXXIX.

46. *Vomiting in Retroversio Uteri.*—M. Brian draws attention to a case in which the obstinate vomiting of pregnancy seemed to depend upon partial retroversion of the uterus, it ceasing soon after reposition had taken place. Prof. Moreau, who saw the case with him, informed him that he had several times met with similar cases, which were as effectually relieved.—*Ibid.*, from *Bull. de Thérap.*, t. li.

47. *Cæsarean Section; Lives of both Mother and Child saved.*—M. Allvin, of Tournehem, relates (*Journal de Méd. et de Chirurgie Pratiques*, Jan., 1856) an instance of this. The mother was 22 years of age, rachitic, the antero-posterior dia-

meter of her pelvis less than two inches, primipara. The child was a well-formed male. The sides of the incision in the abdomen were kept in contact by means of compresses and bandages, M. A. being opposed to sutures in these cases. A nearly uniform progress was made towards recovery, and at the date of the report both mother and child were quite well.

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48. *Asphyxia of new-born Infants and its Treatment.*—Dr. Marshall Hall read before the Harveian Society (Nov. 20th, 1856), the following remarks on this subject:—

"The newly-born infant and the newly-born of many of the mammalia are in a peculiar condition, both in an anatomical and physiological point of view.

The foramen ovale and the ductus arteriosus being still open,[1] the blood of the pulmonary circulation is still diverted from the channels it is destined to pursue, and in this respect it resembles the reptile tribes.

Respiration, and every stimulus, *except temperature*, being absent, the excitability of the spinal system and the irritability of the muscular system exist in their highest condition, according to a law of animal life which I announced some years ago, viz., that these faculties are throughout the animal kingdom, *inversely as the stimuli.*

The new-born fœtus is, therefore, a creature of high excitability and irritability. But such an animal bears the absence of stimuli precisely in the same ratio. Respiration is the chief of these stimuli; therefore, to arrive at the subject of this paper, the new-born fœtus can long survive the absence of respiration.

The condition of apnœa and of asphyxia, without the absolute loss of life, is therefore of long duration, and the hope of restoring the stillborn infant is long protracted; so must, therefore, our efforts at resuscitation be."

[*Note.*—I must here briefly advert to the well-known question of Harvey,[2] and the not less famous experiment of Buffon, leaving them to your meditation. Harvey asks why the infant which has never breathed bears the suspension of respiration longer than the infant which has once respired?[3] Buffon had the idea that if the fœtus of the class mammalia was born under water, and respiration prevented, the foramen ovale and ductus arteriosus would be prevented from closing, and that in this manner life might be protracted under water. A chimera! for what respiration would there be if both placental and aerial respiration were excluded? But life does not exist without respiration.]

"These efforts consist—

1st. In measures to induce sufficient respiration; and,

2d. In measures to maintain the circulation.

In order that respiration may be effected, we must adopt the following means:—

1st. The infant must be placed in the prone position, in order that all fluids which might obstruct the entrance into the windpipe may flow away.

2d. Nature's mode of operation being to impress the trifacial and cutaneous nerves, the external *excitors* of respiration, by the external cold, we must dash a few drops of cold water on the face and the general surface.

3d. We must proceed, having failed to *excite* respiration, to *imitate* the respiratory movements.

This must not be done by *any forcing* means; even the human breath, forced into the infant's lips, may *tear* the delicate tissue of the fœtal lungs. We must, on the contrary, adopt some measure of *drawing* the air into the lungs. This is effectually accomplished by first placing the little patient

[1] This patent condition of the foramen ovale and ductus arteriosus continues, according to the researches of M. Flourens, during eighteen months of extra-uterine life in the human species.—*Histoire de la Découverte de la Circulation*, pp. 67, 69.

[2] Exercitatio Anatomica Secunda de Circulatione Sanguinis. Guilielmi Harveii, p. 258. Glascuæ, 1751.

[3] "Cur fœtus in utero, non respirans aerem, usque ad mensem decimum, ob defectum respirationis non suffocatur? Cur natus in septimo, vel octavo, quam primum aerem inspiraverit, inhibita postmodum respiratione, ob defectum aeris suffocatur?"

briskly in the prone position, to clear the fauces; then pressing gently on the back; and then removing that pressure, and turning it gently on the side and a little beyond.

4th. Meantime the limbs are to be rubbed, with gentle pressure, upwards, to promote the circulation, by propelling the venous blood towards the heart.

5th. At proper intervals we must again endeavour to *excite* the respiration physiologically.

The infant is to be placed with the face prone, and douched alternately and rapidly with water of the temperatures of 60° and 100° Fahr.

High and low temperatures are equally excitants of the reflex function of respiration, and their power, within physiological limits, is in proportion to the difference of those temperatures.

We must remember that the newly-born infant is a creature of high irritability and low stimulus, and that the foramen ovale and ductus arteriosus are open—both events greatly calculated to protract life and hope in the case of apnœa; and we must long, very long, *persevere* in our efforts to save the stillborn.

The stillborn infant has been restored after it has been neglected for hours!

There is a remaining consideration. The effect of apnœa is a condition of the blood surcharged with, and poisoned by, carbonic acid; from this condition of the blood a secondary asphyxia and convulsions are apt to occur in the adult. I do not know whether this be the case with the newly-born infant; I trust our worthy President will enlighten us on this and other points in regard to the subject of this paper.

The *remedy* and preventive of such secondary asphyxia would be, free exposure to the breeze, with the inhalation of very dilute pure ammonia.

The treatment of the stillborn infant may finally be thus briefly resumed in the form of Rules:—

1st. Place the fœtus on the face.

2d. Sprinkle the general surface briskly with *cold* water.

3d. Make gentle pressure on the back; remove it, and turn the infant on the side; and again place it prone with pressure.

4th. Rub the limbs, with gentle pressure, *upwards*.

5th. Repeat the sprinkling, only now, with cold and hot water (of the temperatures of 60° and 100° Fahr.) alternately.

6th. Continue these measures, or renew them, from time to time, even for hours. The embers of life may not be entirely extinct!

'*Lateat scintillula forsan.*'"

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49. *Statistics of Operative Midwifery.* By Dr. Ricker.—This interesting contribution is derived from midwifery practice in the Grand Duchy of Nassau. This contains 429,341 inhabitants, and there are 100 civil practitioners, besides 20 others who practise while holding military or other appointments. These practitioners are required to make half-yearly returns, stating the characters of prevalent disease, the most remarkable of the surgical cases, and all the midwifery cases. The author has had access to the midwifery returns, and furnishes here an account of the results of his examination, as far as operative midwifery is concerned. Between 1821 and 1842, inclusive—*i. e.* 22 years—304,150 births were recorded.

1. *Forceps.*—These were employed in 4,223 cases, or about 1 in 72 cases. As, however, the earlier returns were somewhat incomplete, Dr. Ricker believes that 1 in 70 would be nearer the mark. The results were that 93 of the mothers died either during or soon after the operation, and that 684 children were born dead; being 1 death in 45 of the mothers, and 1 in 6 of the children. The indications for the employment of the forceps are noted in 708 of the cases only, viz:—

Disproportion of size in the head and pelvis	287
Absence or feebleness of pains	269
Weakness or exhaustion of patient	33
Prolapsus of funis	29
Spasmodic or violent pains	22

Face presentation	20
Convulsions	12
Descent of parts with head	8
Placenta prævia	3
Faulty presentation of head	7
Rigidity	4
Tumefaction of pudenda	4
Erysipelas pudendi	7
Putrescency	1

2. *Turning.*—There were 10 cases of cephalic version, and 2,473 of turning by the foot, or 1 in 123. The results were 176 deaths on the part of the mother, or 1 in 14; while 1,431 children were born dead, or died soon after—or nearly 1 in 2. The indication for turning is recorded in 530 cases, viz:—

Transverse presentation	388
Placenta prævia	82
Prolapse of funis	28
Narrow pelvis	18
Hemorrhage	5
Other dangerous affections	4
Face presentation	2
Faulty presentation of head	2
Convulsions	1

3. *Perforation* was resorted to in 143 instances, or 1 in 2,126. There were recorded 88 recoveries and 35 deaths, while in 20 cases no results are given.

4. *Dismemberment* was effected in 22 cases, 16 mothers recovering, and 6 dying.

5. *Cæsarian Section.*—Between 1821 and 1843, with 311,409 births, this operation was performed 12 times, 2 mothers and 7 children being saved. This gives about one Cæsarian operation in 26,000 births. The operation was performed 33 times after the death of the mother, but none of the children were saved.

The author compares these results with the statistical accounts of the authors; but these being well known, we have not quoted them.—*Medical Times and Gazette*, Oct. 11, 1856, from *Monatsschrift für Geburtskunde*, Band vi. pp. 81—101.

MEDICAL JURISPRUDENCE AND TOXICOLOGY.

50. *Antimonial Poisoning.*—A long-continued and careful series of experiments have been made by Dr. B. W. Richardson on this subject. The experiments have now extended over several months, and have formed the subject of two communications to the Medical Society of London. The following are the conclusions arrived at:—

1. That antimony, both as regards the symptoms it induces and the pathological results arising from its administration, excites effects in the dog identical with those which it excites in man; and that experiments on dogs thus afford a fair basis of comparative research. 2. That the skin, peritoneum, cellular tissue, lungs, all absorb antimony in its soluble form with as much certainty as the stomach; and that, whether introduced by any of these channels, or by direct transfusion into the blood through the veins, the diffusion of the poison is equally complete, and its effects specifically the same. (Absolute.) 3. That, after any such mode of introduction, antimony may be detected in the vomited and purged matters, in the stomach and in the contents of the stomach, in the intestines and their contents, and in the lungs, liver, kidneys, blood, urine, heart, and even in serum effused into cavities, if such be present. (Absolute.) 4. That, consequently, the detection of antimony in vomited or purged

matters, in the stomach or the contents of the stomach, or in the intestines or in their contents, can no longer be considered as any judicial scientific proof that the poison was introduced into the system by the alimentary canal at any part, as has been assumed. (Absolute.) 5. That antimony, being absorbed with great rapidity wherever introduced, the point of surface at which it is taken into the system may afford slighter indication of the presence of the poison than any other parts of the organism: *ergo*, that the point of introduction can never be proved by mere chemical analysis. (Absolute.) 6. That antimony applied locally, so as to admit of being rapidly absorbed, seems to excite but little amount of local injury, although it exerts marked local effects when brought by the blood to any surface for elimination: *ergo*, that the appearance of intense redness or inflammation in the stomach or other part of the alimentary canal, in supposed cases of death from antimony, is no scientific proof, nor yet indirect evidence, that the poison was received into the system by this canal. (Absolute.) 7. That the symptoms of poisoning by antimony by large doses are, as a general rule, those of vomiting, purging, and rapid collapse; and that the same symptoms, somewhat modified in their course, result from small doses repeated frequently during a prolonged period. 8. That to this rule exceptions occur: to wit, that antimony, when thrown into the system in a large dose, and in such a way as to prevent its digestion, as by direct injection into the veins, may destroy the muscular power so suddenly that the symptoms of vomiting and purging may not present themselves. And, again, that when introduced very slowly, as by application to a small wound, it may also destroy by producing simple exhaustion, without the specific symptoms of purgation or vomiting. 9. That, in all forms of antimonial poisoning, death occurs mainly from failure of the circulation; the respirations being continued after the cessation of the heart's beat. 10. That the pathological appearances incident to antimonial poisoning are—(*a*) general congestion; (*b*) marked fluidity of the blood; (*c*) intense vascularity of the stomach in the course of the greater curvature, and, in some cases, of the rectum and other parts of the canal, but without ulceration; (*d*) a peculiarly pale yellow or occasional dark glairy secretion on the alimentary surface. Lastly, contrary to the statements of Magendie, antimony seems to excite no other pulmonary lesion than simple congestion. 11. That the election of antimony by different parts of the body is as yet an open question; that the liver, however, would appear to be the structure in which it is most collected when the administration is slow and in small doses; and that the elimination of the poison is attempted by all the secreting surfaces. 12. That, in rapid poisoning, the fatal effect seems due to direct chemical changes in the blood, and to indirect effect therefrom on the heart; while, in slow poisoning, there is superadded an interference with the assimilative powers, the result of the lesions excited in the stomach and other parts of the alimentary canal.

We have further to remark that, in animals dosed for a few days with antimony, and then kept for periods of seven, fourteen, and twenty-one days, antimony was found in each case in abundant proportions in the liver, and in smaller proportions in the kidney and heart; and also in the contents of the stomach in cases where the animals were destroyed during digestion of food.

The "tolerance" of antimony seems to us to depend entirely on the free elimination of the poison by the kidney.—*B. and F. Med. Chirurg. Rev.*, Oct., 1856.

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51. *On the Action of Urari and of Strychnia on the Animal Economy.* By Prof. Albert Kölliker, of Würzburg. (Communicated to the Royal Society.)—The communication which I now offer to the Royal Society, contains a brief statement of the results of a series of experiments which I lately made on the action of the urari poison and of strychnia on the animal economy.

I. *Urari.*—The urari is the well-known poison from Guiana, also called Curare and Woorara. That which I employed in my experiments I owe to the liberality of my friend, Professor Christison, of Edinburgh. The following are the conclusions at which I arrived respecting its operation:—

1. The urari causes death very rapidly when injected into the blood or inserted into a wound; when introduced by way of the mucous membrane of the

intestinal canal, its effects are slow and require a large dose for their production, especially in mammalia. When applied to the skin of frogs it is altogether inoperative.

2. Frogs poisoned with very small doses of urari may gradually recover, even after it has produced complete paralysis of the nerves. Mammalia may also be restored, even after large doses, provided respiration is maintained artificially.

3. The urari, acting through the blood, destroys the excitability of the motor nerves. In frogs under its operation the terminal branches of these nerves within the muscles lose their excitability in a few minutes, whilst their trunks become affected an hour or two later. If, after the nervous extremities have become paralyzed, the heart of the animal be excised so as to prevent the nerves from receiving any further share of the poison, the nervous trunks may retain their excitability for three or four hours.

4. The brain is less affected by the urari than the nerves in the muscles; still when, by ligature of the two aortic arches, in frogs, the poisoning is confined to the anterior half of the body, the voluntary movements of the limbs speedily cease, while automatic movements, of doubtful nature and probably proceeding from the medulla oblongata, may be still observed for half an hour or an hour after the poison has begun to operate.

5. The spinal cord is considerably less affected than the brain by this poison, and by local limitation of the poisoning (as in No. 4) it is found that the cord retains its reflex activity from half an hour to an hour and a half, and the excitability of its white substance or its conducting power from two to three hours after the poison has taken effect. It is worthy of remark that in such cases the impaired reflex activity of the spinal cord may be revived by strychnia directly applied to it.

6. The sensory nerves, as shown also by locally limited poisoning, retain their functional activity as long at any rate as reflex actions can be excited, and when the depressed reflex activity has been revived by means of strychnia, these nerves are found not to have been in the slightest degree injured, so that it seems doubtful whether the urari in any way affects them.

7. The nerves of the involuntary muscles and of the glands are also paralyzed by the action of urari, at least I find this to be true in the following cases, viz:—

a. The pneumogastric, as regards its influence on the heart.
b. The sympathetic (its cervical portion), in its relation to the iris.
c. The nerves of the posterior lymph-hearts of the frog.
d. The nerves of the vessels in the web of the frog's foot.
e. The splanchnic nerves of the rabbit, as affecting the peristaltic motions.
f. The nerves governing the secretion of the submaxillary gland in dogs.

8. The voluntary muscles remain perfectly excitable, but show a greater tendency than usual to merely local contractions. In general the cadaveric rigidity of these muscles appears to set in later than usual.

9. The plain or non-striated muscles also remain long irritable after poisoning by urari.

10. The heart, in amphibia, is little affected by urari. Its pulsation as well as the circulation of the blood goes on regularly for many hours after the poisoning is established. The only thing worthy of note is that the beat of the heart appears to be somewhat quickened, probably from paralysis of the pneumogastric nerves. In frogs poisoned with urari, the heart, when cut in two, shows the usual phenomenon, namely, that the half which contains the ganglia continues to pulsate while the other does not; from which, it may be inferred, that these ganglia are not paralyzed. As to the nerves in the substance of the heart, those at least which are derived from the pneumogastric, are unquestionably paralyzed (vide No. 7).

11. The lymph-hearts of frogs poisoned with urari soon cease to move.

12. The blood of animals poisoned by urari is fluid and dark, but coagulates when drawn from the vessels, and forms a weak clot which is but little reddened by exposure to air. Directly mixed with blood, urari does not prevent

coagulation, but the blood in this case also remains dark, and scarcely reddens on exposure.

13. The blood of animals poisoned by urari has the same poisonous qualities as that substance itself, but not in a degree sufficient to produce the full effects of the poison. Urari when directly mixed with blood loses none of its efficacy.

14. Urari, in concentrated solution, applied locally to nerves extinguishes their excitability, but only after a considerable time, and it appears to act similarly on the nerves in the substance of the muscles. Dilute solutions have no injurious operation. Applied directly to the brain and spinal cord, urari is altogether harmless provided its absorption be prevented.

15. When artificial respiration is kept up in quadrupeds poisoned with urari, I find that, as observed by Bernard, many of the secretions become increased—as the tears, saliva, urine, and mucus of the air-passages, which effect appears to be owing to the paralysis of the vascular nerves and consequent dilatation of the vessels caused by the poison.

16. In mammalia urari causes death by paralysis of the respiratory nerves and suppression of the respiration, which brings on convulsions in these animals as a collateral effect. In frogs the final extinction of the functions may also be partly ascribed to suppressed action of the lungs and defective oxidation of the blood, which at length renders the heart unfit to perform its office; but it must be observed that in this case the cause of death is not so plain, inasmuch as in these animals the functions are in a great degree independent of the pulmonary respiration.

II. *Strychnia.*—Some experiments with strychnia (the acetate) gave the following results:—

1. Strychnia has not the least influence on the peripheral nerves through the blood, which is best shown by cutting the nerves before administering the poison.

2. Strychnia paralyzes the motor nerves of the voluntary muscles by exciting them to too energetic action, a paralysis which may be compared to that caused by powerful electric currents acting upon the nerves. In frogs, when the tetanic spasms are over, the nerves often show no trace of excitability; in mammalia they generally retain it in a slight degree, but never show the same energy of action as when uninjured.

3. Strychnia does not affect the sensory nerves.

4. The heart is not affected by strychnia, not even during the tetanic spasms, with the exception only that its pulsations are sometimes a little slower during the tetanic state. On the contrary, the lymph-hearts of frogs contract themselves as soon as the tetanus begins, and remain in this state as long as the spasms last.

5. The tetanic fits can be brought on in two ways: first, through the sensory nerves, which, by irritating the gray substance of the spinal cord, produce the tetanic contractions as reflex movements; and, secondly, through the brain, which is not affected at all by strychnia and preserves its powers of volition and sensation. Accordingly, animals poisoned with strychnia try to move in the ordinary way, but every attempt brings on a tetanic fit, so that it is plain that the spinal cord may also be excited by the brain to its peculiar actions.

6. If the tetanus produced by strychnia has been strong, the muscles are less irritable and pass much sooner into the state of cadaveric rigidity, which is very strongly marked, and seems to last longer than it generally does. The same early onset of rigidity may be observed in animals killed by tetanus excited by electricity.—*Med. Times and Gaz.*, Sept. 13, 1856.

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52. *On Oils as Promoting the Poisonous Action of Cantharides.*—The solubility of cantharidin in oils has led Orfila, Taylor, Christison, Mitscherlich, Oesterlen, and other toxicologists to promulgate cautions against the use of fatty matters in poisoning with Spanish flies. On the other hand, Clarus, in his *Handbuch der Specielle Arzneimittellehre*, considers that there are no grounds for this caution. Professor Schoff, of Vienna, who has performed a number of experiments on the action of Spanish flies and cantharides, has published

the results of the administration of these substances in combination with oil. Three rabbits—two of four and six months old respectively, and one full-grown—had the poison given to them. To the first was administered 15½ grains of powdered cantharides, rubbed up with olive oil; to the second, 7¾ grains, prepared in the same way; and to the third was given 1½ grains of cantharidin, similarly prepared; to each were also administered several table-spoonfuls of olive oil. The results compared with cases in which the poison was given without oil, were the following:—

1. The symptoms during life were identified in both classes of cases.

2. Death occurred soonest in the cases in which oil was given. Fifteen grains of cantharides with oil caused death in four hours; without oil, in five hours. Seven and a half grains with oil destroyed life in nineteen hours; without oil, in twenty-six hours. One and a half grains of cantharidin, with oil, killed the animal in four hours; without oil, in from seven to ten hours.

3. The *post-mortem* appearances give evidence of less action of the poison on the parts with which it comes in contact, where oil is given, than when the poison is taken alone. In the three rabbits poisoned as above related, there was no vesication of the tongue; and the inflammation of the stomach and intestines was less than in cases of the other class. On the other hand, the signs of inflammation of the urinary system were more strongly marked where oil was given. The bladders were contracted and empty; the kidneys were much injected; and the urinary mucous membrane presented on its surface a larger quantity of epithelium, nuclei, and blood-corpuscles.—*Assoc. Med. Journal*, Sept. 20, 1856, from *Wochenblatt der Zeitschrift der k. k. Gesellschaft der Aerzte zu Wien*, Nos. 48 and 49, 1855.

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53. *Poisonous Effects of Vapour of Sulphuret of Carbon in Caoutchouc Manufactories.*—In describing the poisonous effects produced by the vapour of sulphuret of carbon on workmen in India-rubber manufactories, Dr. DELPECH gives the following case as typical:—

CASE.—Victor Delacroix, aged 27, of good general health, in 1853 commenced to work in an India-rubber manufactory. His duty was to dissolve the gum in sulphuret of carbon; and in the room where he was employed, there was constantly a large quantity of the vapour of this substance. During three months he suffered from violent headache; at the end of this time, he was seized with general *malaise* and intense vertigo, and his sight became so weak that he was obliged to leave off work in a few hours. His hearing also became affected, and in a week he was so deaf that persons were obliged to shout into his ear to make him hear; this deafness disappeared spontaneously after some time. His memory became so weak that he forgot every minute where were the tools which he had just used. His temper also became very changeable: sometimes he was excessively lively, and at others he was angered by the most trifling circumstances, and would break everything near him. He slept with difficulty—frequently not at all; and awoke suddenly under the influence of painful dreams or convulsive starts, accompanied by rigors, heat, and profuse perspirations. Even during the day, he was seized with an icy coldness for several hours, which left him in a state of great lassitude. He had severe attacks of colic, frequent indigestion, nausea, vomiting of greenish matters several times in the day, and transient diarrhœa of fetid matters alternating with constipation. There was constant loss of appetite; the mouth was pasty and expectoration frequent. He became so weak that he was obliged to sit at his work, to use a stick in walking, and to rest at each step in going up stairs. This debility, which affected both the upper and the lower limbs, was accompanied by a kind of cramp or transient convulsions in the muscles of the hands, which for a short time deprived him of the use of his fingers. The sexual appetite was altogether lost. His wife, when she was in the habit of remaining some time with him in his work-room, was also seized with headache and muscular debility. She fell into a state analogous to that of her husband, but much less severe. The young child of Delacroix, on being brought from the country and passing three days in the workshop, was seized with a kind of furious delirium, and attempted to bite its parents. In March, 1854, Delacroix entered

the Bicêtre and came under the care of M. Delpech. The symptoms described above continued. He was emaciated, very pale, and his breath smelt of sulphuret of carbon. He could walk only with a stick; he had severe pain in the limbs, which were much diminished in size, especially in the muscular parts. As occurred in cases of lead palsy, his hands were in a state of pronation, and hung down, from the greater debility of the extensor muscles; the flexors, however, were themselves weakened. Muscular contraction was feeble and tremulous. He could not close his hand with any force, and when the arm was kept extended for a few seconds, the fibres of the muscles quivered very remarkably. Sensation was perfect, as was also the contractility of the muscles under electricity. His intellect did not appear altered; he was only somewhat vague. There was a very marked intermittent *bruit de souffle*. He had frequent slight attacks of coughing; but no disease could be found in the chest, or in any of the other organs.

Electricity, sulphur baths, iron, and nux vomica, were employed during the few days that he spent in hospital. He soon was dismissed, at his own request, in an improved condition, and with the muscular weakness diminished. No conclusion, however, could be arrived at as to the efficacy of the treatment. He spent some time in the county, and put himself under a tonic regimen. He observed that the solar warmth and light removed the pains in his limbs. He became greatly improved in health, and remained so until the beginning of winter. In January, 1855, M. Delpech saw him, when, although some symptoms of his disease had reappeared in consequence of his having partially returned to his work, the following was his condition: The muscular paralysis had almost entirely disappeared: the impotence continued, and the emaciation and anæmia were still strongly marked. In consequence of the symptoms threatening to return, he was obliged to quit his employment.

General Survey of the Symptoms.—Although the preceding case is typical, the symptoms of poisoning by sulphuret of carbon are manifested in different degrees. They are thus arranged by M. Delpech, as derived from the cases which have come under his notice:—

1. *Disturbance of the Intellectual Functions.*—Impairment of memory is the most common and most marked of the symptoms of this class. The workmen forget what they have to do, and make great mistakes, to the injury of the manufacture. Every moment they search for the tools which they have just laid aside; they are vague in their ideas, and cannot keep their attention fixed on any one subject. Two patients, observed by M. Delpech, could not find words to express their ideas. Some became violent and irritable, being angered at the least cause, striking all who came in their way, and breaking objects near them. Want of sleep, restlessness, fatiguing dreams, and awakening with starts, were observed in almost all M. Delpech's cases; during the day, these patients were depressed, and without energy; and, whether from want of sleep, or, more probably, from the influence of the sulphurous vapours, they felt a strong propensity to sleep.

2. *General sensation* is not very severely affected; however, there is almost always some heaviness of the head, more or less severe headache, sometimes very intense, and extreme vertigo. The pain, it has been observed by M. Bouchardat, occupies the top of the head, and is sometimes transient, lasting only two or three hours, sometimes obstinately persistent. In several cases, there have been observed pains in the limbs like chronic rheumatism, and general creeping and pricking sensations. M. Delpech has never observed well-marked anæsthesia; but M. Bouchardat has noticed slight loss of sensibility in the arms and hands. In one of M. Delpech's cases, there was complete insensibility to pain—common tactile sensibility remaining; in another, there was marked hyperæsthesia.

3. *Special Senses.*—Though no structural lesion could be discovered in the eye, the sight was, in M. Delpech's cases, greatly weakened. The pupils were mobile, but generally dilated; a thick cloud seemed spread between the patients and the objects at which they looked. Hearing was temporarily affected in several. The food of the patients, their tobacco, and all odorous objects, appeared to them impregnated with the fumes of sulphuret of carbon.

4. *Generative Functions.*—In nearly all the cases, the sexual appetite was lost. Coition was almost impossible. As the patients were young healthy men, this fact is the more remarkable: and perhaps this impairment of the sexual function is one of the most marked symptoms of poisoning by sulphuret of carbon. The same effect has been observed in females.

5. *Motion.*—One patient had frequent painful cramps of the limbs; another had involuntary contractions of the upper eyelid; and another had a kind of transient contraction of the flexor muscles of the fingers. M. Bouchardat and M. Delpech have observed a stiffness of the fingers, and of the upper limbs in general. In all the patients, muscular weakness was strongly marked, both in the lower and the upper limbs. There was in all the patients a degree of hesitation in their movements approaching to general tremor; but it appears to have reached a high degree in one case only. The muscular debility was accompanied by marked atrophy. In one case, the arms were so reduced that there was a depression in the interosseous space of the forearm; and the muscles of the thenar eminence were greatly reduced. The power of contraction under electricity remained in the muscles of all the patients who were submitted to this test.

6. *Digestive Organs.*—The symptoms have generally begun by slight disturbances of the digestive functions. Loss of appetite has been constant, and has reached so high a degree as to amount to disgust for all food, from the idea that it tasted of sulphur. The appetite reappeared in several when they had passed some hours in the air. Another symptom has been constant nausea, not always, but generally, amounting to vomiting. The vomiting returned at various times; sometimes during work, when the ejected matters were greenish and bilious; sometimes after breakfast, when the food was rejected. The vomiting was generally accompanied by extreme *malaise* and cold sweats, and left the patients much exhausted. Salivation, properly so called, was not observed; but several had their mouths frequently full of saliva. Colic was an habitual symptom, occasionally very severe: it was not regularly accompanied by either diarrhœa or constipation. The fecal matters very often smelt strongly of sulphuret of carbon: some of the patients complained much of flatulence.

7. *Respiration.*—The breath generally smells of sulphur. There is generally some breathlessness after walking: the respiration is short; but M. Delpech has only twice discovered any abnormal physical signs.

8. *Circulation.*—The heart seemed healthy in all the patients. Several felt palpitation at various periods. In the cachectic patients, *bruits de souffle* were heard in the vessels of the neck. No constant febrile phenomena have been observed. In some there have been sudden rigors, with acceleration of the pulse, especially during the night.

9. *Secretions.*—The urine in these cases has not been sufficiently examined; but in some it has been at times coloured brown by alkalies, and at other times has contained a large amount of sulphates and carbonates. Several of the patients have felt pain during micturition—due, if their observation of the odour of the urine be correct, to the presence of sulphur. M. Delpech has observed an odour of sulphuret of carbon in the urine kept for his examination. The slight irritation of the urethral mucous membrane may be also explained by the presence of salts in abundance.

10. *Cachexia.*—The patients fall into a more or less marked state of cachexia: they are pale, their skin is pasty, their mucous membranes lose colour, and anæmic murmurs can be heard. Most frequently, this cachexia is complicated by the complete or partial persistence of the symptoms of which it is the sequel. General weakness, loss of sexual power, and a sensation of vagueness in the mind, are the most usual concomitant phenomena.—*Assoc. Med. Journal*, Sept. 20, 1856, from *L'Union Médicale*, May 31, 1856.

AMERICAN INTELLIGENCE.

ORIGINAL COMMUNICATIONS.

Lard as an Antidote to Strychnia. Dr. Wm. H. Hammond, in a letter to the editor, dated Fort Riley, Kansas, Aug. 4, 1856, writes:—

"I must tell you that I have tried Dr. Pindel's antidote to strychnia—lard. I gave two grains of the poison to one dog, without the antidote; and two to another, with the addition of a pint and a half of melted lard. The best of the joke is, that the *latter* died in four hours, and the *former*—miserable, worthless cur, who doubtless was too mean to die—is still running about in the finest possible state of health. So much for lard. We are of the opinion here that strychnia is quite harmless, unless lard is indulged in."

Puerperal Fever Previous to Labour. By M. Shepherd, M. D., of Payson, Ill.—On the evening of the 15th of March, last, I was summoned to see Mrs. B., of a neighbouring village, a lady 25 years of age, in her fifth pregnancy, and within twenty days of full term. She had had a chill on Thursday, three days previous to my visit, which was followed by high fever and severe pain in the left iliac region, and also in the mammary gland of the same side. As she had, previously, during lactation, suffered from what she termed "weed in the breast," she refused to have a physician sent for, notwithstanding the urgent appeals made by her husband, who is a very intelligent man and a minister of the Gospel. The remedies used for her relief during this time, of course, were of a domestic nature, such as intelligent ladies are in the habit of using in such attacks as she supposed hers to be.

When I arrived, she stated that she had been "flowing" quite freely, for several hours, but had no other signs of labour. Her pulse was 140, and her respirations 28 to the minute. The tongue was clean, but dry; abdomen very tense. I expressed my surprise that she should have suffered so long without medical advice. The husband stated that she insisted on treating the breast in her own way, and as she had suffered from pain in the left side two or three weeks immediately previous to three consecutive confinements, which had been occasioned by the "placenta growing fast to that side of the uterus," she would not consent to see a medical man. I informed him that his wife had puerperal fever in its gravest form, and that to me there was a peculiarity which I had not before met with—its occurrence previous to the birth of the child.

In Dr. Meigs' valuable work, "*Woman and her Diseases,*" I find the following, which I had marked with a pencil, when I first read it, four years ago:—

"The attack of puerperal fever generally begins previous to the fourth day after delivery of the child. Not a few examples are recorded in which it began previous to the labour. I have seen such a case myself," &c.

As there was nothing that seemed to be more clearly indicated than bleeding, in this case, it was resorted to, and seemed to afford considerable relief. I remained with her during the night, but did nothing more. In the morning labour came on, and in less than an hour she gave birth to a dead fœtus.

The labour was natural and easy; the after-birth was not attached as previously. She congratulated herself that she was much better, the pain and tension of the abdomen having almost entirely subsided. I left her, after breakfast, but visited her again that night. She appeared quite comfortable and cheerful; had but little pain, but considerable tympanites. Respirations, 30; pulse, 136, and feeble; tongue dry. Her friends thought that I had been unnecessarily alarmed, and were quite elated with her appearance. I ordered fomentations to the abdomen, and five grains of blue mass every four hours until I should see her again. I was sent for early the next morning, and found pulse 170—respirations 26. She would occasionally throw up a wash-basin full of greenish fluid. The tenderness and tension of the abdomen very much increased. Applied episp.; gave 10 grs. calomel, and ordered it moved off with castor oil and spts. turpentine in six or eight hours. *Evening.* No evacuation; continued oil and turpentine, with an occasional enema. *Tuesday Morning.* No evacuation; pulseless; vomiting continues. Expired Wednesday. No *post-mortem* allowed.

Spontaneous Rupture of the Spleen. By THEOPHILUS MACK, M. D., of St. Catharines, Canada West.—The pathology of the spleen having occupied a portion of the pages of the *American Journal of the Medical Sciences*, lately, and as it is the impression that Rokitansky was the first to point out the occurrence of ruptured spleen spontaneously in consequence of acute tumefaction, I beg leave to submit the following case published by me in the *British American Medical and Physical Journal*, for October, 1856:—

"Thomas Flynn, ætat 48, blacksmith, of medium stature, constitution somewhat impaired. In earlier life had served as a private soldier in an infantry regiment, and had been treated at the Regimental Hospital for some disease of the chylopoietic viscera, for which local depletion and counter-irritation appear to have been prescribed, as there are marks of leech-bites and vesicants apparent over the epigastric region.

Last summer I was called upon to attend him for some abdominal affection, probably cholera morbus. During the last eight or nine months he has resided in a shanty on the margin of a stagnant pond, near the debouchement of the Welland Canal into Lake Ontario.

For some weeks past he had been labouring under intermittent fever of a tertian type, in the treatment of which he had employed a certain nostrum ycleped "cholagogue," which, as his friends expressed it, "broke the chill," so that he had been enabled to work at his trade for the space of three or four days, still complaining of dizziness and the effects of secondary mal-assimilation.

Upon the 22d of June he was engaged in the construction of some iron bands. After swallowing a moderate draught of cold water he was suddenly seized with severe pain, and, having been carried to bed, a messenger was dispatched for me. I found him writhing in great agony; he referred the seat of pain to the left side of his chest and abdomen. The skin was bathed in a copious sudor, features sharpened, and countenance anxious; "intellect not affected; tongue of a leaden hue, cool; bowels torpid, tenderness on pressure in left hypochondriac region: abdominal pain deep-seated; respiration hurried; no abnormal resonance; no râle; heart's action extremely rapid, feeble, *bruit de souffle;* pulse 160, small and tense; urine suppressed. No relief followed treatment, and he died about sixteen hours from the time of his seizure.

Morbid Appearances.—Our examination was limited by the friends to the abdomen. The integuments of that region were distended and tympanitic. The incision through the linea alba was succeeded by the escape of a large quantity of flatus and bloody serum. Peritoneum injected, that of the intestines pink-coloured. The liver of the usual size and weight, but softened in structure, and upon being incised the parenchyma appeared abnormally dark.

Pancreas small and hard. Stomach and intestines healthy. About five pints of sero-sanguinolent fluid was effused upon the left side. A large clot of extravasated blood which issued through a rent in the spleen, extended from the diaphragmatic surface of that organ, and behind it, to the commencement of the lumbar region. The investing membrane of the spleen was easily peeled off, and contained, in addition to the substance of the spleen, which was of a light-chocolate colour, a dark-brown mass destitute of organization (altered blood), attached to a defined edge apparently effused from the splenic parenchyma within the capsule. Left kidney large and pale. Right kidney normal. Remaining contents of abdomen presented no pathological appearances."

Remarks.—This case appears to have been a solution of continuity from a sudden hyperæmia in an organ already having sustained a species of apoplexy (if the term be admissible), with an extravasation resulting. It is not exactly one of those supervening upon "acute and violent tumefaction proceeding to a most intense degree," or occurring in the "*hot stage* of ague."

If we may be allowed to venture upon a solution of the cause of this case we should suggest that, probably, during the *cold stage* of some former paroxysm of intermittent, an extravasation within the covering took place. (This might have been increased at each subsequent congestion.) The draught of cold water might have been followed by a determination of blood to the spleen, the already over-distended capsule gave way, and a fatal hemorrhage was the result.

DOMESTIC SUMMARY.

Concussion of the Nerves.—Prof. Willard Parker states (*New York Journal of Medicine*, Sept. 1856) that a number of cases have come under his observation which he cannot otherwise explain than on the supposition that the nerve receives a shock, and the function is for the time suspended, in a manner similar to injuries of the great nervous centres. He relates six cases illustrative of this accident, and gives the following conclusions in regard to its diagnosis, prognosis, and treatment:—

"*Diagnosis.*—It is of the utmost importance, for the successful issue of this affection of the nerves, that the nature of the accident be early understood. The first effect of concussion of the nerves, as of the brain, is a sudden suspension of function. The part is temporarily paralyzed; reaction soon comes on, with a gradual restoration of power. This may result in an inflammatory attack, and the early treatment should be directed to its prevention. When this period has passed, although the nerves of the part seem to have recovered their functions, they are really enfeebled, and incapable of their former exertion. If the organ which they supply is subjected to severe exercise, it becomes the seat of a dull, 'aching, or tired pain,' the sure evidence of exhaustion. The latter is one of the most constant symptoms of this affection of the nerves, and deserves especial attention. It will be observed that the injured limb is intolerant of severe exertion, and, when exercise is carried beyond a given limit, nervous exhaustion follows, and nothing but rest, often long continued, will restore its previous comfortable condition.

"*Prognosis.*—The prognosis in concussion of the nerves depends much upon the early treatment pursued. If the nature of the injury is properly recognized, and the means employed for the gradual restoration of the healthy tone of the concussed nerves be judiciously selected, entire recovery may be confidently anticipated. The history of the foregoing cases, especially numbers 2 and 3, would lead us to infer that, after apparent recovery, the nerves remain irritable, and liable, on the occurrence of an exciting cause, to a relapse. If, however, the condition of the nerves is not understood, and active, exhausting measures are resorted to, the prognosis is decidedly unfavourable. Aggravation of the

symptoms promptly occurs, partial paralysis and a gradual wasting of the limb follow, and its usefulness is permanently impaired. The weak and irritable condition of the nerves of a part extends to the nervous centres, causing a general nervous irritability, and this, in turn, aggravates the local affection. In no instance has the disease resulted fatally to life.

"*Treatment.*—The proper treatment of concussion of the great nervous centres has long been well understood; rest, until the equilibrium of the circulation is restored, and such lesion as may exist is repaired, is the most positive and essential element in the treatment. It is, in fact, the *sine qua non*. If the concussed brain, or spinal nervous centre, is prematurely exerted, a morbid process is set up, which insidiously, but surely, leads to a loss of its integrity. Of other means, which are but adjuvants to *rest* in the treatment of these cases, it is not necessary here to speak.

"The proper treatment of concussion of the nerves, immediately after the accident, I regard as one of the utmost consequences for future success. Perfect recovery depends entirely upon the plan thus early pursued. As in concussion of the brain, so in concussion of the nerves, *rest* is an element of treatment without which all other remedies will positively fail. A perusal of the foregoing cases will confirm this assertion. I am the more anxious to impress this fact upon the practitioner, because, without exception, active remedies were early employed in these cases, and the limb was forced into too active exercise, and always to its positive injury. This course has been pursued from a wrong understanding of the nature of the injury inflicted upon the nerves. It has been supposed that the function of the nerve was simply suspended, that its power was dormant, and it only required stimulation to restore its healthy action. For this purpose electricity has been used in addition to powerful local applications and exercise, but always with positive injury. Local depletion has been practised, under the impression that the pain was due to local inflammation, and the result has been no less unsatisfactory.

"On the contrary, I regard the affection as one of pure nervous debility, the nerves being enfeebled by the shock. To employ stimulants under such circumstances, would be to goad an already exhausted beast, or urge to exertion a patient prostrated by disease, in the hopes of thereby increasing strength. The condition of the nerves of the limb is similar to that of the retina in the disease known as asthenopia, viz., one of true exhaustion.

"By rest, in the treatment of concussion of the nerves, I do not mean an absolute state of quiet, but a certain degree of rest, alternating with such an amount of *passive exercise as never causes the return of the 'dull, tired pain,'* of which patients invariably complain when the nerves approach the state of exhaustion. Passive exercise, as riding in an easy carriage, or on the water, not carried beyond this limit, proves decidedly beneficial, and should be encouraged.

"Next to this degree of rest, or limited exercise, dry frictions of the limb have given the most relief. Friction may be made with the hand or a coarse cloth, and should be continued according to the feelings of the patient. The application of a wet towel has seemed to afford some relief, and may be resorted to; hydropathic treatment has not, however, afforded any other results than improvement of the general health.

"The condition of the general system should be carefully attended to, for on its integrity depends the tone of the nervous system. This fact is illustrated in case 3, where an attack of cholera severely aggravated the existing affection of the nerves of the leg. While all fatiguing exercise of the body, within the limits specified, should be scrupulously avoided, it is not less important that the mind be not overtasked by exertion or anxiety. In case 2, the patient, a lawyer, could never apply himself to business without an aggravation of his symptoms, attended with general prostration; and in case 3, reading and writing proved equally injurious, exciting dull pain in the limb.

"In conclusion, the following propositions may be stated:—

"The first effect of concussion of the nerves is temporary paralysis, more or less complete, of the limb; the second effect is an enfeebled condition of the

nerves, leading to deficient innervation, emaciation of the limb, and permanent paralysis.

"The proper treatment is rest, alternating with passive exercise, dry friction, and improvement of the general health."

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Partial Fracture of the Neck of the Femur in a Man Forty-four Years of Age.—Dr. JACKSON exhibited to the Boston Society for Medical Improvement, Sept. 22, 1856, a specimen of this. The fracture, which appears as a mere crack in the bone, commences anteriorly just above, but very near to, the insertion of the capsular ligament, runs along this insertion for about an inch, and then extends directly upwards to the margin of the head of the bone. From this last point it crosses the upper surface of the neck almost in a straight line, and at a little distance from the margin of the head, but afterwards approaches very closely to this margin posteriorly; it then turns downwards and obliquely forwards, and stops at a point about half way between the small trochanter and the head of the femur, and two-thirds of an inch or more anteriorly to the line of this trochanter. The fracture then involves about three-fourths of the neck of the bone; the inner-anterior portion only being spared. There is considerable motion between the neck and the shaft, and the fracture could undoubtedly be completed without the application of any extraordinary force. Dr. J. referred to other cases of partial fracture; but a fracture of this sort, as occurring in this situation and in a fully adult subject, he believed had never before been described. There was also, in this case, a transverse fracture of the same femur midway, with a split extending upwards nearly to the neck of the bone; and still further, a fracture of the spine. The patient, a labouring man, fell through two stories of a building and down upon a hard floor. On the same day he entered the Mass. General Hospital, and on the 18th day from the time of the accident, he died. The femur is perfectly healthy in structure, and no changes are observable in the bone about the fracture.

Dr. Mussey, of Cincinnati, remarked that this specimen was one of great interest, and alluded to the case of a hospital patient that fell under his care, in which he suspected the same accident. The patient had fallen; there was lameness of the hip; *no shortening, no eversion.* On the following day, still no shortening could be discovered. During that night he walked about the ward. On the next day, the limb was found to have shortened to the extent of one-fourth of an inch. There was evident fracture of the neck of the thigh bone, and an extending splint was applied, and kept on for three months. The patient left the hospital with the limb shortened to the extent of three-quarters of an inch. Dr. M. questioned whether this were not a partial fracture, in the first instance, afterwards rendered complete by walking.—*Boston Medical and Surgical Journal*, Nov. 27, 1856.

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Constitutional Effects of Anæsthetic Agents.—The *New York Journal of Medicine* (Sept. 1856) contains an interesting paper on this subject, by Dr. J. HENRY CLARK, of Newark, N.J., in which he relates the three following cases occurring in his practice, where he considers that the anæsthetic, without producing any untoward effects at the time of administration, gave rise subsequently to a train of symptoms of a very distressing character:—

"*Case* 1.—Mr. J. M., a gentleman about 30 years of age, of good constitution, who ordinarily enjoyed good health, took *ether*, to facilitate the extraction of a tooth. He is of a nervous temperament, light complexion, blue eyes, and light hair. The administration of the agent produced no unusual effect, except that a 'choking feeling' was experienced just before the occurrence of complete insensibility. After recovery from the immediate effect, for several weeks extreme nausea and constant pain in the head were experienced.

"After the lapse of three or four months, Mr. M. applied to me for advice, complaining of the following train of symptoms, the commencement of which he dated from the day that he inhaled the ether. He is an intelligent man, and has no doubt that they are wholly attributable to the inhalation, and that they commenced at that time. These symptoms, he says, he never before experienced. Is very 'bilious' (to use his own language); tongue much coated; constant pain

in the head, especially over the eyes; a 'feeling as if there was a *want of mental exercise;*' habitual costiveness; pain in the right side and back; indigestion; want of muscular strength; nervous system greatly deranged; neuralgic pains; and great despondency of mind.

"Change of habits, mineral tonics, and alteratives restored him to perfect health after a few months. All these symptoms at length disappeared.

"*Case* 2.—Mr. C. M. inhaled *chloroform*, for the purpose of having a tooth extracted, in November, 1854. In the afternoon of January 5, 1855, I was called hastily; found him in a state of dreadful nervous excitement. He had just recovered from a period of insensibility; his extremities were cool; pupils of the eyes natural; some heat about the head and neck; convulsive twitchings in the face; and trembling, with nervous agitation and mental excitation.

"When the urgent symptoms were relieved, I learned that he recovered from the immediate effects of the inhalation without any unusual symptom; that it was followed by a very unpleasant feeling in the top of the head, such as he had never experienced before; that this symptom and neuralgic pains had been constantly experienced from the day that he took the chloroform.

"In the morning of January 6, while lying reading on the sofa, he was seized with a singular sensation of bewilderment and other feelings that he finds no language to describe. These sensations greatly alarmed him. Recovering himself, he went to his father's warehouse; while there engaged, an hour or two afterwards, he again experienced those singular sensations, but found himself unable to *articulate distinctly*. His father perceiving that he was ill, observing convulsive twitching in his face, with pallor and anxiety, and perceiving in his conduct a desire to go home, took his arm and walked with him to his residence, about half a mile distant. I was soon after summoned, and found him in the condition heretofore described.

"I prescribed stimulants, antispasmodics, and alteratives. He did not leave his room for a week, during which he suffered from extreme restlessness, anxiety, and vertigo. His pulse continued, during the week, depressed. I treated him with tonics and antispasmodics, and mild mercurial alteratives, with evident advantage; but his neuralgic symptoms yielded slowly. His liver was constantly torpid; lassitude, indecision, and depression of spirits were indicated in his conduct.

"I advised a voyage to Europe. He sailed in May, and remained till September. He returned very much benefited, but had the same furred tongue that was evident in the case previously referred to, with more or less habitual costiveness. These symptoms have yielded to the use of mild alteratives, and he seems now, after the lapse of fifteen months since its inhalation, to have recovered again his wonted strength and vigour.

"In the case last alluded to, it required about eighteen months to rally from the influence of the ethereal inhalation. In the case to which I shall next refer, over two years was required to outlive the same train of symptoms, mostly neuralgic, which commenced from the day of the inhalation.

"*Case* 3.—Mrs. W., about 25 years of age, dark complexion, dark eyes, dark hair, of sanguine temperament, none of the nervous. She had usually enjoyed good health, although not robust. She received *chloroform* at the hands of a dentist also. I was called a year afterwards to prescribe for a set of symptoms very much like those described in the cases before narrated; neuralgia and 'strange feelings about the head' were the prominent symptoms described, with a general feeling of 'malaise.' I found, as in the other cases, a determined conviction that all these symptoms were new, and that they commenced with the inhalation. I treated her as I did the others, depending mainly upon *iron;* the appearance of the countenance indicated the want of a larger supply of iron in the blood. She gradually regained her usual health. It required a full year, however, to accomplish the cure. The writer believes that the experience of others, if it could be accumulated, would prove that—

"1. Chloroform is most dangerous when employed in cases of trifling importance, both in relation to its immediate effects and final results. This is proved by the greater frequency of cases in which unpleasant results are observed,

which follow the extraction of teeth, or its use in trifling operations, where there is not pain enough to resist its excessive effects.

"2. That persons whose nervous systems are particularly susceptible are most liable to suffer from the inhalation of these agents.

"3. That the use of chloroform in the lying-in chamber is not devoid of danger.

"A very limited inquiry into the experience of others has been made, with the following results. An eminent practitioner, in answer to my inquiry, says: 'I have given it in four cases of accouchement. One of my patients had puerperal mania, and another congestion of the brain, both within six days afterwards. It is possible that chloroform was not the cause in either case; but I have never ventured to use it since.' A lady of eminence in New Jersey took chloroform in labour, became comatose, immediately recovered, with *permanently impaired* intellect.

"In the experience of a neighbouring practitioner, a perfectly healthy girl, aged 18, sanguine temperament—catamenia regular—applied to a dentist to have a tooth extracted under the influence of chloroform. It was done very carefully by a prudent man. A very few inspirations sufficed to produce insensibility. The tooth was extracted, but sensibility did not return for several days; a serious congestion of the brain followed, continuing for several weeks, and, though several years have elapsed, she continues in a partially demented condition, subject to periods of excitement somewhat like those which she exhibited during the original attack.

"A physician of New York city relates a case of a young woman, aged 28, in good health, who, after the extraction of a tooth, was immediately seized with the most distressing symptoms. Every muscle in the body commenced jerking and twitching. These phenomena continued for four days, despite the means adopted for her relief. They ceased at length under the use of strychnia. I am not informed with regard to the influence upon the mind.

"The same gentleman related the case of a young girl, in a good family (without date, age, name, or any facts, lest the matter might become public and grieve the friends), who became crazed immediately after taking chloroform to facilitate the extraction of a tooth. *Years have passed, and she is still a maniac.*

"Another case has come to my knowledge of a child fourteen years old, who took chloroform when about to undergo a trifling operation. She became deranged. *Six years have passed, and she has in nowise recovered.*

"Morris County, N. J., furnishes a case, that I am not at liberty to report, in which permanent idiocy resulted from the inhalation of chloroform.

"That these agents should be used with great caution is further proved from their influence upon certain susceptible constitutions, when not taken for the purpose of producing insensibility, but when merely exposed to an atmosphere charged with the fumes of ether or chloroform. On this point I have several illustrations, but one will suffice.

"Mr. ——, a highly respectable dentist of ——, of nervous habit, light complexion, active motion, suffered from all the symptoms which were observable in the cases which I reported in my own experience in the early part of this article, simply from breathing the fumes of these anæsthetic agents as they permeated the apartments in which he operated and resided. He was accustomed to use these agents in his practice almost hourly. His house was perpetually filled with the odour. He became at length feeble, pulseless, anemic —'felt as if he had been drinking champagne'—suffered from neuralgia and very great nervous debility. Abandonment of business, a residence in the country for three years, and constant out-door exercise, and the use of electricity, accomplished a cure at the *end of that period.* He has no doubt but his illness resulted from this cause, and that his recovery is due to its removal, and the remedies employed.

"My honoured and beloved preceptor, the late James C. Bliss, M.D., related a case to me last spring, in which amaurosis, followed by idiocy, resulted from the use of chloroform or ether in parturition. They succeeded the inhalation so promptly, that it is evidently proper thus to trace cause and effect. I understood that all who saw her, both in and out of the profession, attributed the

amaurosis and the subsequent derangement to the inhalation of one of these agents—I did not understand which.

"Several other cases have come to my notice, in which the inhalation of anæsthetics seemed to produce similar constitutional effects. They were not my own patients, and I could not get access to well-authenticated facts in relation to them.

"These facts have made upon my own mind the impression that these agents should be regarded as remedies of great potency, and not always certain to produce none but salutary effects; that they should not, if possible, be administered to persons subject to local determination, or where their antecedents offer reason to apprehend derangement; that their use should be avoided in persons of extremely nervous temperament, or for any cause of nervous susceptibility.

"We have the authority of eminent men, in Europe and in this country, whose experience in the use of these agents has been very extensive, in favour of their usefulness and safety. Still, these gentlemen have committed themselves in favour of what may be regarded as their hobby, without being chargeable with any want of respect, and the experience of others does not justify fully their opinions with regard to their entire safety.

"If cases of dying do *sometimes* occur in the lying-in chamber and on the operating-table—if debility, hepatic congestion, neuralgia, apoplexy, and mania do *sometimes* follow their use—it would appear proper that he who would deserve a reputation for wisdom and discretion should be quite certain that the severity of the case demands a *somewhat hazardous* remedy. Chloroform furnishes most valuable assistance in the operations of surgery and the lying-in chamber. With no disposition to undervalue it, and far less to treat lightly the valuable statistical evidence furnished by Professor Channing, of Boston, and Professor Simpson, of Edinburgh, of its comparative safety when carefully employed, I cannot believe that its employment to relieve the pangs of *ordinary confinement*, or to allay the pain of a trifling operation, is wise or expedient. If in my comparatively limited experience three cases should come under my observation within about two years, others, situated more advantageously, could note many such cases, if looked for. To record the result of my observations, and to prompt abler observers to look in the same direction, is the whole of my present purpose.

"While writing the concluding pages of this article, I have been called to administer chloric ether in a case of amputation of the adventitious toe of each foot from a young gentleman of vigorous health. Although the operation was not very protracted, and the ether was administered by a discreet medical assistant, derangement followed; nor were my anxieties entirely relieved with regard to these effects before the lapse of six or eight hours.

"If the facts which I have collated are sustained by those of larger experience—if there are constitutional effects as well as immediate to be guarded against, more regard should be given to the habits of the patient, and these agents should surely be reserved for grave and trying emergencies."

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Remote Effects of Anæsthesia on the System.—Dr. Frederick D. Lente records (*New York Journ. Med.*, Nov. 1856) the three following cases, in which anæsthetics appear to have been productive of serious ill consequences, and which have occurred in his practice within the last five years:—

"Case I. In the summer of 1853, assisted by Dr. Leroy, formerly Resident Surgeon of the New York Hospital, I operated on a boy in apparent good health, eight years old, for contraction of the index and middle fingers of the right hand, the result of the cicatrization of a bone some years previously. As the case required a careful and somewhat protracted dissection of flaps into the palm of the hand, the patient was subjected to the influence of sulphuric ether, administered by Dr. Leroy, on a sponge in the usual way. Nothing remarkable occurred either during the administration of the anæsthetic or during the operation, and but a moderate quantity of blood was lost. The patient soon recovered consciousness, but in a short time he became very feeble, and soon commenced vomiting, although no food had been allowed for seven hours previous to the operation. The pulse commenced sinking rapidly, conscious-

ness being unimpaired. Frictions were at once resorted to, and stimulants attempted, but were immediately rejected by the stomach. The prostration soon became extreme, and dissolution appeared imminent both to Dr. Leroy and myself. Brandy was freely administered by enema, and retained, and, in the course of an hour or two, reaction slowly commenced, but it was not until several hours had elapsed that it was considered safe to dress the wounds, so slowly did the patient recover from the prostration.

"Case II. This patient, a young man in ordinary health, not robust, æt. about 25, of nervous temperament, wished to have a large number of decayed teeth and fangs of teeth removed. At the request of the dentist who was to operate, I administered sulphuric ether, patient sitting upright in the operating chair, a necessary position during such an operation. The patient had previously been considerably frightened both at the idea of the operation, and of the anæsthetic, although unwilling to undergo the suffering without it; he had accordingly primed himself pretty thoroughly with brandy, but was in nowise intoxicated. Nothing unusual occurred during the administration of the ether, and anæsthesia was induced without difficulty. Six stumps were rapidly and skilfully extracted, say within three minutes, perhaps within two. The patient then showed some signs of returning consciousness, and more ether was administered; anæsthesia was soon re-established, and six more teeth were, with equal rapidity, extracted. The anæsthesia was very complete, but there was no unusual difficulty in recovering the patient, and he was soon able to walk home. A week or two after this, he applied to me, complaining of debility, pain about the head, and dizziness, a disposition to faint and fall down, and various nervous symptoms, which, he said, had troubled him ever since the operation. He was very low spirited and fearful of some serious disease. He, of course, attributed all this to the ether. I endeavoured to divert his mind from this idea, and prescribed change of air and tonics. He went away, but returned within a few weeks not much better. Subsequently he improved, and after a couple of months longer was much better, though still rather nervous and desponding. He afterwards went to the city to reside, and since that time I have not seen him.

"Case III. W. M., a young gentleman, about 30 years old, in robust health, of temperate habits, was attacked with ulceration of the soft parts of the mouth from pressure of a crowded wisdom tooth; the pain was very severe, causing loss of rest and food. I advised the extraction of the tooth, but the dentist to whom he applied merely cut away the overhanging edges of the ulcer; the inflammation increased and extended to such a degree as to produce almost complete closure of the jaws, with inability to open them. It was absolutely necessary now that the tooth should be extracted as the only means of arresting the inflammation, and it was therefore proposed to etherize the patient in order to allow the jaws to be forced open sufficiently to admit the introduction of a forceps. Sulphuric ether was accordingly administered; the patient came rapidly under its influence, scarcely requiring an ounce and a half, though not entirely unconscious; the jaw was forced open with but little difficulty, and the tooth rapidly extracted by the dentist in attendance. The patient soon recovered, but seemed a little nervous and considerably excited, but expressed himself as entirely relieved from the severe pain he had been suffering. He was advised to go home and lie down for a few hours. He walked home, about a quarter of a mile or more, and followed my advice; but in the afternoon complained that the ether was still in his lungs, and sought to get rid of it by riding and walking. In the evening he was at the house of a friend in gay society, and seemed to enjoy himself, still, however, occasionally complaining of some difficulty about his chest, when, all at once, he fell from his chair, exhibited great restlessness, tossing about of the arms and legs, with great difficulty of breathing, but no loss of consciousness, declaring all the time that he could not get his breath for the ether, and that he should die; his hands and feet were said to be cold. Before I reached him, various restoratives had been applied, and he had been almost drowned by the assiduous application of hot water. It was evident at once that it was a case of violent hysterics, unusually well marked in a male. Patient at times would laugh and joke, then express

fears of impending suffocation, with jactitation, declaring that as vapour of ether was heavier than air, he ought to be held up and allow it to run out of his lungs. As he was rather weighty to allow of convenient inversion, his request was not granted. Large doses of morphine were administered, but had no effect; it was only after several hours that he could be quieted. The next day he was able to be up, but complained of weakness and a disposition to faint on the slightest attempt to walk, also of some difficulty of breathing. This continued for some days, but finally disappeared, and, within ten days, he was apparently in his usual condition. Patient had never previously exhibited any tendency to hysteria."

Placenta Prævia with Twins.—Dr. H. R. Storer communicated the following example of this to the Suffolk District Medical Society, Sept. 27, 1856.

"Two days since (Sept. 25) I was suddenly summoned by Dr. Hobbs to a patient of his own, who was then lying dead. I found the woman, Irish, perhaps 30 years of age, and previously the mother of a single child. She had thought herself about eight months gone, and at intervals, during several weeks, had passed blood from the vagina, with the ordinary symptoms of placenta prævia, which Dr. Hobbs had very properly diagnosticated. Labour pains had commenced the night before, and with alarming hemorrhage. Dr. Hobbs was then called, found the patient's strength good, her pains absent, the os but partially dilated, and had plugged the vagina, expecting to be notified of any change for the worse. Hearing nothing from the patient, he answered another obstetric call that night, and visiting his first patient next morning, found her four hours dead from sudden and profuse flooding. Much trouble being made by the friends, who charged him with culpable neglect, I was called in his defence and to deliver the woman.

"The children having been long dead, I preferred doing so by abdominal section rather than *per vaginam*, that I might better study the case. By preliminary vaginal examination, I found the placenta freely bulging through a well-dilated os, but still completely attached throughout its circumference. The abdomen was then opened, and it became at once evident, before incising the uterus, that there were twins. These were both removed from the uterus, with the double placenta, without rupturing the membranes. The larger, a boy of perhaps six pounds, occupied the left side, its head presenting; the other, a girl, presented by the feet. The membranes were completely separate, save within an inch of the placentæ, which were fused into one. Each sac filled with liquor amnii, and each funis with the battledoor attachment and to the left—so that that of the right sac was implanted almost at the very line of fusion of the two placentæ. These last were situated directly over the os, and were still extensively attached. I was not permitted to remove the uterus, and cannot, therefore, so decidedly speak of the nature of the attachment of the placentæ with the uterus as I could wish. My impression, however, is with Madge, as laid down by him in the last number of Braithwaite, that there is no *direct* vascular communication between the mother and fœtus, but that there is a membranous septum between the placenta and uterine wall. Fragments of such are very evident on inspection of almost any placenta. My belief now is that it exists *entire*. The placentæ, in this case, were readily separated from the uterus, and their early and direct removal might have checked the hemorrhage.

"Strangely enough, no case of *placenta prævia with twins* seems ever to have occurred in the practice of any noted accoucheur, or at any lying-in hospital. With only two exceptions,[1] and these from other men's practice and but incidentally mentioned, none are recorded in any work on obstetrics; the possibility even of such a coincidence I can find nowhere referred to.

"There seems, however, *à priori*, no good reason why this coincidence should not occur, and as often, proportionally to the relative frequency of twins, as its occurrence with single children.

"On investigating the matter, I am able by statistics to prove that this *is*

[1] Levret, Accouch. Lab.; J. Ramsbotham, Pract. Obs.

the case, and that the actual ratio of this coincidence is strikingly identical with what might have been expected."—*Boston Medical and Surgical Journal*, Nov. 27, 1856.

Congenital Multilocular Cyst.—Prof. F. H. HAMILTON exhibited to the Buffalo Medical Association (October 7, 1856) a specimen of this. The little girl from whom it was obtained was 11 years old. "At birth a small hard tumour was noticed on the left cheek near the angle of the jaw, a portion of which was firm, and a portion elastic, as if containing fluid. Dr. Van Aernam, of Chatauque Co., had for some time supposed it to be connected with the parotid gland.

In May of this year, the child was brought to me. The tumour was then so large as to cover nearly the whole of the left cheek. It was elastic. With an exploring needle, I ascertained that it contained a bloody serum, and that it was multilocular.

A violent inflammation and great swelling followed this small wound, which only subsided after a fortnight, and a bloody serum continued to discharge many days.

On the 24th of June, I gave her chloroform and proceeded to extirpate the tumour, assisted by Boardman, and Messrs. Mason, Flint, &c. I soon ascertained that the mass was composed of the parotid gland; the portio dura and the external carotid artery passing through it. The first was cut, and also the trunk of the temporal artery. I removed, with great labour, all of the tumour lying upon the cheek, and descended as far as was practicable into the space behind the jaw.

The tumour itself consisted of an innumerable aggregation of cysts or of spaces, varying in size from a pin's head to the size of a pullet's egg; the largest cysts being those which were nearest the surface, those which lay most profound being scarcely discernible as cysts, and finally the cysts seemed to be entirely lost in the natural tissue of the gland.

The walls of these cysts were in the main thin and smooth, but inlaid with duplications or columns resembling very much the columnæ carneæ and chordæ tendineæ of the heart.

The contents were uniformly the same, serum coloured with blood, and as the walls were diaphanous, the smaller cysts looked like dilated veins.

On every side the cysts were firmly adherent to the adjacent tissues, and the vascularity of these tissues was very remarkable. We tied a large number of arteries.

I did not close the wound until all bleeding had ceased, and the dressings then applied were very light and simple.

Within a few hours after the operation was completed, a swelling commenced around the margins of the cavity, which soon became very tense and painful. A bloody serum also continued to ooze for several days.

This interesting little patient, whose courage was always equal to her suffering, remained under my charge several weeks and then returned home. I have since learned, indirectly, that her recovery was complete, but with how much disfigurement of the face I am unable to say.

This is the second time I have met with a tumour of this character. I mean a multilocular cystic tumour.

In the first instance referred to, the child, a fine healthy boy, was one year old, of light complexion and sandy hair. At birth a small purplish spot, like an erectile nævus, in which the venous character predominated, was seen on the left shoulder blade. At the time of my operation, February 23, 1855, it was of the size of a cocoa-nut, elastic, smooth, and without tenderness.

I opened it freely with a simple incision, but did not attempt to dissect it out. A number of cysts came consecutively into sight and were opened. The cysts contained a thin, yellow serum. There was not at this time any hemorrhage of consequence.

Twenty-four hours after the operation I found the sac filled with blood. I first removed the clot and seared the wound with a hot iron, but as the bleeding did not cease, I opened the sac and tied numerous small vessels in the partitions of the various cysts.

In twenty-four hours it was again full of blood, and at the end of forty-eight hours I emptied it thoroughly, and opened nine more cysts which I had not seen before, but which were now very large. I again seared all the sacs with a hot iron, and still further sought to control the bleeding with perchlor. ferri. The bleeding did not return, but the child died, partly from the shock, and partly from the loss of blood, on the fourth day after the operation.

I have seen one other case of encysted tumour, whose walls were exceedingly vascular, and from which a troublesome hemorrhage has followed. This was the case of a young miss ten years old, with a simple encysted tumour of three years' growth, situated on the back, over the lower angle of the scapula. The hemorrhage in this example continued four days, and was finally arrested, with great difficulty, by the actual cautery. I have seen, also, other cystic tumours containing a sero-sanguineous fluid, one of which at least was congenital.

It is to the multilocular cystic tumours, however, that I wish especially to call your attention, and of which this specimen is an example, since they are fortunately very rare, and, I have reason to believe, their character is not so simple as they at first seem to be. There is, in fact, a strong probability that they are all more or less erectile.

The example before you corresponds to the usual history of erectile tumours in the following circumstances: It was congenital. It was painless in its growth. Its walls and partitions were exceedingly vascular, and this vascularity extended much beyond its outer walls, and after excision, the neighbouring tissues continued not only to bleed but became rapidly and intensely swollen, as if from vascular erythema and congestion.

In its minute anatomy, also, it bears a striking analogy to erectile tumours not only, but to erectile and cavernous tissue in its normal state; the smaller spaces, or the cells in those portions where the disease had not so fully developed itself, resembling the cells of many purely erectile tumours, and especially the cells of the corpora cavernosa of the penis. The contents also of the cells was a bloody serum.

Similar multilocular cysts have been mentioned by pathologists. Mr. Paget records two, in both of which the septa were fasciculated like the walls of the right auricle, which were removed successfully. Mr. Paget thinks both of them may have had their origin in vascular nævi. That such was the fact with my little patient, who was only a year old at the time of the operation, the early history clearly shows. This specimen which I show now seems to have been a development of the natural structure of the parotid gland, but it was still erectile and congenital, and may properly be called a nævus.

It was impossible to remove this tumour entire without previous ligature of the carotid artery, and I chose to remove as much as possible and trust to suppuration.

I am not yet prepared to say how I should proceed in another similar case. It is certainly very difficult to cut them out entire, owing to the vascularity of all the structures adjacent, and to the intimate union which their walls have everywhere with these structures. In some regions such dissections would be totally impracticable. I should be unwilling again to trust to simple incision, or to partial exsection, on account both of the danger of hemorrhage and of the probable inefficiency of these measures. In the examples quoted by Paget, one of which was on the back and one on the pubis, and neither of which were congenital, the tumours were safely exsected; but the patients were much older than either of mine, and the writer has not sufficiently described the embarrassments of the operation, if any existed, to enable me to judge of its applicability to other cases.

I presume for the present we shall only attempt to cut them out entire, but my own experience might warn surgeons not to regard such procedures as always unattended with serious difficulties."—*Buffalo Med. Journ.*, Nov. 1856.

Laryngotomy for Syphilitic Disease.—Dr. Geo. Amerman, late House-Surgeon of Bellevue Hospital, narrates (*Northwestern Med. and Surg. Journ.*, Oct. 1856) an interesting case of secondary syphilis, in which laryngotomy was performed after apparent death, and the patient recovered. The subject of it was a woman,

twenty-five years of age, admitted into Bellevue Hospital, April 10, 1856. At the time of her admission, she had large bullæ over the whole upper part of the body and head. The throat was not carefully examined; and I am unable to say whether or not it was ulcerated. She had no dyspnœa or pain; her pulse was good, but her condition indicated an impaired constitution and a general syphilitic cachexia. She was ordered small doses of hyd. bi-chlo., with the tinct. cinch. co., good diet, and anodynes at night. About five hours after my visit, I was hastily summoned to her by the nurse, who told me she was dying. I found her sitting up in bed, unable to speak, and gasping for breath; her lips and ends of her fingers were livid, and the veins of the neck distended. The dyspnœa was so severe that it seemed to threaten immediate suffocation. On examining the throat, nothing was perceptible except a general redness of the fauces, which was most intense on the anterior surface of the epiglottis. Pressure over the larynx caused some pain. Inspiration was more difficult than expiration. Physical examination of the chest revealed nothing abnormal. The air entered the lungs, and was resonant throughout. It was thought expedient to try scarifications, which, however, proved useless. An emetic of zinci sulphas was next given, but without producing emesis. Her dyspnœa had now become so alarmingly urgent, that it was decided to open the air-passages. Laryngotomy was the operation proposed, as the obstruction was thought to exist in the larynx—probably at the vocal cords. Some time necessarily elapsed in preparing the instruments, &c., prior to the operation; and, just as I was about to make the first incision, the patient gave a gasp, and apparently expired. All respiration, or efforts to respire, ceased. The pulse, which had been before extremely feeble and rapid, now became more so; and, in half a minute after she ceased to breathe, her heart stopped pulsating. At the moment respiration ceased, I proceeded rapidly with the operation, and, in one and a half minutes, succeeded in introducing the tube. Artificial respiration was resorted to, and, in less than a minute (between one-half and one minute), natural respiration commenced. I think there was an absence of the respiration for at least two minutes, and of the pulse for at least one and a half minutes. The respiration ceased first, and was first restored. When the patient was fully resuscitated, her pulse, though feeble, was regular and much slower, her respiration perfectly easy, and she sank into a quiet and refreshing sleep. Some trachitis followed the operation; but her recovery was as rapid as could have been expected. She wore the tube for twelve days, when it was removed, and the wound allowed to close. Her rupia was treated with alterative doses of hyd. bi-chlo. and tinct. cinch. co.; but it seemed to have very little good effect, and, instead, large doses of iod. potassa were substituted, which acted promptly and beneficially. The large scabs became detached, and slowly separated, leaving a healthy ulcer underneath, which rapidly healed. Her recovery was complete. The wound in the throat closed, and respiration through the natural passages became free and easy.

Dr. Amerman states that, during his residence in Bellevue Hospital, laryngotomy was performed four times for syphilitic disease of the throat, and, in all the cases, the operation was successful. Two of them left the Institution entirely cured. In both, the tube was worn for a shorter time than one month, when they were able to breathe easily through the natural passages, all symptoms of disease of the throat having disappeared. The third case died, eight months after the operation, from lupus, which had extended to the base of the skull, and excited secondary arachnitis, which was the immediate cause of death. In this case, the tube was never removed. The fourth case was the one whose history I have given above. It was perfectly successful. The tube was worn for twelve days, when all signs of disease in the throat disappeared. This case is also interesting in two other particulars: *First.* As showing the necessity of the operation; and, *Secondly*, the complete relief afforded by it. So far as these cases go, they point to the conclusion already arrived at by some surgeons, that, in cases of acute disease supervening on chronic syphilitic affections of the throat, the obstruction is situated in the larynx, and that laryngotomy affords relief, and hence, being an easier operation than tracheotomy, should be performed.

Vomiting of Forty Years' Duration.—The following curious case of this character is recorded (*Boston Medical and Surgical Journal*, Oct. 30, 1856) by Dr. JACOB BIGELOW:—

"A lady, now 79 years of age, has been at times under my care for the last twenty years. She reports that at the age of 39 or 40 she had a severe fever, on recovering from which she found herself unable to retain either food or liquid upon the stomach in any considerable quantity. She is confident that during the whole period of forty years she has never retained a meal, but has vomited regularly at least three times a day. If she eats or drinks in irregular or intermediate hours, the material received is always thrown off, even if it be only a cup of tea or of water. The vomiting is easy, and without pain or great effort. The matter thrown up consists of the ingesta, having usually an acid taste. There is no bile, except during the presence of some temporary indisposition. She takes her food with relish, and in most instances throws it off quickly, being often obliged to leave the table abruptly for that purpose. If the vomiting is not complete, she occasionally drinks warm water to promote the evacuation and relieve uneasiness, especially at going to bed. She is confident that she ejects as much as she receives, but her daughter, who resides with her, thinks it may be three-quarters as much. This last supposition is undoubtedly nearest the truth, and would leave for her support one-quarter of each meal taken.

"She is now in her eightieth year, having led an active life, in the enjoyment of a competent degree of health, except an occasional attack of acute disease. She has four times had severe erysipelas, attended in two instances with considerable sloughing. She has had dysentery more than once. Last spring she broke the os humeri, and had an abscess in the shoulder. She is now in the enjoyment of fair health, the functions duly performed, and has made a journey of a hundred miles within a few months. She is confident that for the period which has been stated, including one-half of her life, she has never retained a single meal.

"I have never found any tumour, effusion, or tenderness on pressure in or about the epigastric region, except the occasional effects of acute disease, as above mentioned. Her habit has been generally spare, but otherwise her appearance, spirits, and bearing are those of a person who has been benefited rather than injured by the smallness of the nutriment left for her support."

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On the Nature and Treatment of Club-Foot and Analogous Distortions, Involving the Tibio-Tarsal Articulation. By Bernard E. Brodhurst, Ass. Surgeon to the Royal Orthopædic Hospital, etc. etc. London, 1856. (From the Author.)

Diseases of the Stomach and Duodenum. By Charles Evans Reeves, B. A., M. D., &c. London, 1856. (From the Author.)

Pathological Chemistry in its Applications to the Practice of Medicine. Translated from the French of MM. Becquerel and Rodier. By Stanhope Templeman Speer, M. D., &c. &c. London, 1857. (From the Translator.)

On the Measle of the Pig; and on the Unwholesomeness, as Food for Man, of Measly Pork. By Alexander Fleming, M. D., Professor of Materia Medica in the Queen's University, Ireland, Dublin, 1857. (From the Author.)

Lectures on the Principles and Methods of Medical Observation and Research for the Use of Advanced Students and Junior Practitioners. By Thomas Laycock, M. D., F. R. S. E., F. R. C. P., Professor of the Practice of Medicine, and of Clinical Medicine in the University of Edinburgh, etc. etc. Philadelphia: Blanchard & Lea, 1857. (From the Publishers.)

On the Constitutional Treatment of Female Diseases. By Edward Rigby, M. D., etc. etc., F. R. C. P., Senior Physician to the General Lying-In Hospital. Philadelphia: Blanchard & Lea, 1857. (From the Publishers.)

Clinical Lectures on Certain Diseases of the Urinary Organs and on Dropsies. By Robert Bentley Todd, M. D., F. R. S., Physician to King's College Hospital. Philadelphia: Blanchard & Lea, 1857. (From the Publishers.)

An Exposition of the Signs and Symptoms of Pregnancy, with some other papers on subjects connected with Midwifery. By W. F. Montgomery, A. M., M. D., M. R. I. A., Ex-Scholar of Trinity College, Dublin, Professor of Midwifery in the King's and Queen's College of Physicians in Ireland, etc. etc. From the second London edition. Philadelphia: Blanchard & Lea, 1857. (From the Publishers.)

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The Physician's Prescription Book; containing list of terms, phrases, contractions, and abbreviations used in prescriptions, with explanatory notes, &c. &c. Intended for the use of Medical and Pharmaceutical Students. By Jonathan Pereira, M. D., F. R. S. Second American from the twelfth London edition. Philadelphia: Lindsay & Blakiston, 1857. (From the Publishers.)

Statistical Report on the Sickness and Mortality in the Army of the United States. Compiled from the Records of the Surgeon-General's Office. Embracing a period of Sixteen Years, from Jan., 1839, to Jan., 1855. Prepared under the direction of Brevet Brigadier General Thomas Lawson, Surgeon-General United States Army. By Richard H. Coolidge, M. D., Assistant Surgeon U. S. Army. Washington, 1856. (From the Surgeon-General.)

Hints on the Medical Examination of Recruits for the Army, and on the Discharge of Soldiers from the Service on Surgeon's Certificate. Adapted to the service of the United States. By Thomas Henderson, M. D., Assistant Surgeon U. S. Army. A new edition. Revised by R. H. Coolidge, M. D., Assistant Surgeon, U. S. Army. Philadelphia: J. B. Lippincott & Co., 1856. (From Dr. Coolidge.)

The Physician's Pocket Dose and Symptom Book. By Jos. H. Wythes, A.

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Transactions of the Fifth Annual Meeting of the Kentucky State Medical Society. Held in the City of Frankfort on the 6th and 7th of February, 1856. Frankfort, 1856.

Quarterly Summary of the Transactions of the College of Physicians of Philadelphia, from July 2, 1856, to January 7, 1857, inclusive. (From the College.)

Transactions of the Medical and Chirurgical Faculty of Maryland—Incorporated in 1799—at its Annual Session in June, 1856, in the City of Baltimore. Published by order of the Faculty. Baltimore, 1856. (From Dr. C. C. Cox.)

Statistical Society of London. First Report of the Committee on Beneficent Institutions. 1. The Medical Charities of the Metropolis. London, 1857.

Eighteenth Annual Report of the Board of Trustees and Officers of the Central Ohio Lunatic Asylum, to the Governor of Ohio for the year 1856. Columbus, 1856.

Illinois State Hospital for the Insane. Fifth Biennial Report of the Board of Trustees, December, 1856. Chicago, 1856.

Annual Report of the Commissioners and Superintendent of the Indiana Hospital for the Insane, for the year 1856. To the General Assembly. Indianapolis, 1856.

Report of the Board of Managers of the Missouri State Lunatic Asylum to the Nineteenth General Assembly. Jefferson City, 1857.

Report of the Pennsylvania Hospital for the Insane for the year 1856. By Thomas S. Kirkbride, M. D., Physician to the Institution. Published by order of the Board of Managers. Philadelphia, 1857. (From the Author.)

Third Report to the General Assembly of Rhode Island, relating to the Registry and Returns of Births, Marriages, and Deaths, in the State, for the year ending December 31, 1855. Prepared under the direction of John R. Bartlett, Secretary of State. Providence, 1856.

Report of the Board of Inspectors of the Western Penitentiary of Pennsylvania for 1856. Pittsburg, 1857. (From Dr. Pollock.)

Report of Select Committee Appointed to Visit Charitable Institutions supported by the State, and all City and County Workhouses and Jails of the State of New York. Transmitted to the Legislature January 9, 1857. Albany, 1857. (From G. W. Bradford.)

Second Annual Report on the Births, Marriages, and Deaths, in the City of Providence, for the year ending December 31, 1856. By E. M. Snow, M. D., City Registrar. Providence, 1857.

Report of the Select Committee in Relation to the Incompetency of Practitioners of Medicine, Surgery, &c. Indianapolis, 1857.

Contributions to Practical Surgery. By Daniel Ayres, M. D., LL. D., Member of the American Medical Association, of the New York Pathological Society, Fellow of the Academy of Medicine, etc. New York, 1857.

An Essay on Muscular Action and its Conditions. The ninth of a series of articles published in the St. Louis Medical Journal "On Life." By J. H. Waters, M. D., Professor of Physics in the St. Louis Medical College. (From the Author.)

Case of Complex Labour. With remarks, etc. Reported by Gustavus L. Simmons, M. D., Member of the Massachusetts Medical Society. Sacramento, 1857.

Surgical Cases. Communicated to the Boston Society for Medical Improvement, October 27, 1856. By Geo. W. Gay, M. D., one of the Surgeons of the Massachusetts General Hospital. Boston, 1856. (From the Author.)

Epidemic Cholera, Diarrhœa, and Dysentery. Pointing out an effectual and expeditious method of cure. With cases submitted to the Medical Council of the Board of Health during the epidemic of 1854. By Henry Jeanneret, M. D. London, 1857. (From the Author.)

Dr. Alexander B. Mott's Surgical Operations. Series No. 1. (From the Author.)

A Discourse Introductory to a Course of Clinical Surgery. Delivered in the Amphitheatre of the Louisville City Hospital, November 7, 1856. By J. B. Flint,

M. D., Professor of Surgery in the University of Louisville. Louisville, 1856. (From the Author.)

The Relation of Drugs to Treatment. An Introductory Lecture before the Medical Class of 1856–7 of Harvard University. By E. H. Clarke, M. D., Professor of Materia Medica. Boston, 1856. (From the Author.)

Dr. Welch's Address to the Candidates for the Degree of Doctor in Medicine in the Medical Institution of Yale College, January 15, 1857.

The following Journals have been received in exchange:—

Gazette Médicale de Paris. November, December, 1856, January, 1857.

Moniteur des Hôpitaux. Redacteur M. H. de Castelnau. December, 1856, January, February, 1857.

Archives D'Ophthalmologie, comprenant les travaux les plus important sur l'Anatomie, la Physiologie, la Pathologie, l'Hygiène et la Thérapeutique de l'Appareil de la Vision. Par M. A. Jamain. Tome 6.

Journal de Médecine de Bordeaux. Redacteur en chef, M. Costes. December, 1856, January, February, 1857.

L'Art Dentaire. Revue Mensuelle de la Chirurgie et de la Prothèse Dentaires. Par MM. Fowler et Preterre. January, February, 1857.

Annales Médico-Psychologiques. Par MM. les Docteurs Baillarger, Cerise et Moreau. January, 1857.

Gaceta Medica de Lima. Organo Oficial de la Sociedad de Médecine. Redactores J. M. Macedo, F. Rosas, J. C. Ulloa, and M. N. Corpancho. August, September, October, 1856.

Medical Times and Gazette. December, 1856, January, Feb., March, 1857.

Association Medical Journal. December, 1856.

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Braithwaite's Retrospect of Medicine. July—December, 1856.

The British and Foreign Medico-Chirurgical Review. January, 1857.

Half-Yearly Abstract of the Medical Sciences. Edited by W. H. Ranking, M. D., and C. B. Radcliffe, M. D. Vol. XXIV. July—December, 1856.

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The Liverpool Medico-Chirurgical Journal. January, 1857.

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Journal of Public Health and Sanitary Review. By Benj. W. Richardson, M. D. January, 1857.

The Dublin Quarterly Journal of Medical Science. February, 1857.

British Medical Journal. Edited by Andrew Wynter, M. D. January, February, 1857.

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The Southern Journal of Medical and Physical Sciences. Edited by Drs. R. O. Currey, Jones, Atchison, King, and Ramsay. July, 1856, February, March, 1857.

New York Dental Recorder. Edited by Chs. W. Ballard, D. D. S. November, December, 1856, March, 1857.

American Journal of Science and Arts. Conducted by Profs. B. Silliman, B. Silliman, Jr., and J. D. Dana. January, March, 1857.

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Iowa Medical Journal. Conducted by the Faculty of the College of Physicians and Surgeons of the Iowa University. September and October, 1856.

The Monthly Stethoscope. Edited by G. A. Wilson, M. D., and R. A. Lewis, M. D. December, 1856, January, February, March, 1857.

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